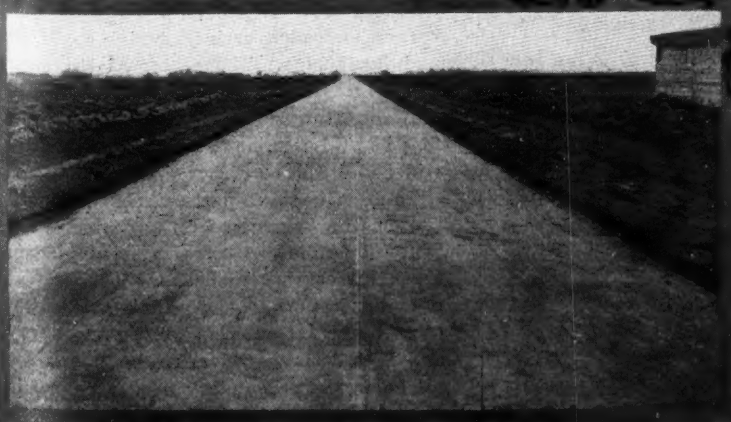
VOL. XIV No. 6 CHICAGO, AUGUST 6, 1908 $3.00 PER YEAR

MOTOR AGE

COURSE FOR VANDERBILT CUP RACE SECURED

NEW YORK, Aug. 3—Nearly 12 miles of the Long Island motor parkway will be available for the Vanderbilt cup race of October 24 next, preceded by an American eliminating trial scheduled for October 10. These 12 miles of perfect motor highway, fenced on both sides by heavy wire, will be supplemented by additional adjoining roads until a course of approximately 30 miles will have been secured for the great American derby of motoring. Formal application for the use of the supplementary roads was favorably acted upon Monday last by the Nassau supervisors.

WETTING THE COURSE—A BANKED TURN



PARKWAY READY FOR CRUSHED STONE

That the Nassauvians would welcome the running of the race once more over their highways was never for a moment in doubt. Their readiness to grant permission to use 20 miles of the county's magnificent highways in connection with the 10 miles of the Long Island motor parkway assured of completion in time for practice for the trials and the race, was confirmed by the outcome of the public hearing at Mineola on Monday morning. Practically no opposition whatever developed and the Nassau county supervisors gave their permission. The sole opposition developed centered in one objector, Charles G. Peters, of Westbury, who declared that the damage done by the racers of 1906 to the roads in front of his Meadow Brook estate had not been repaired and further complained of the violation of speed limits during the preliminary practice. The protests of Mr. Peters, however, were more than offset, by the advocacy of the race by Charles

ACTUAL WORK ON PARKWAY, SHOWING WOODEN MOULDS, MIXING MACHINES AND WIRE NETTING

Christman, of the Central Park Citizens' Association, and the unanimous approval of the large gathering of county landowners present at the hearing.

The formal permission was granted contingent upon the commission giving the county a bond for $25,000, not to be released until all the roads used had been restored to their normal state of repair, which was promptly acceded to by the petitioners as a reasonable demand.

Most important, however, of the details of the promotion of the race was the announcement by A. R. Pardington, who made the application on behalf of the Vanderbilt cup commission as a member thereof, that 1,200 uniformed and armed men would be furnished to guard the course, in addition to the deputies furnished by the sheriff of Nassau county.

The policy and promise of the A. A. A. that it would not promote or sanction a race not properly policed was thus made good. This policy, be it remarked, has been endorsed at the big road races and hill-climbs of the past season to the entire protection of the public. Mr. Pardington further offered to station flagmen at all crossings during practice and racing hours and to make such other provisions as the safety of the contestants and citizens might demand. Incidentally, the supervisors decided to purchase two motor cycles fitted with speedometers to assist in the arrest and conviction of violators of speed limits on Nassau county roads. When considering the question of protection it must not be forgotten that the 11 miles of the motor parkway, where the majority of the spectators will naturally congregate, will be guarded by a high fence on either side, absolutely cutting off the public from access to the course. More detailed information of the course, built and secured for the running of the race than was outlined in the formal petition to the Nassau county supervisors assures the fastest circuit ever prepared for a motor car road race. Over it an average speed of 70 miles an hour is possible. In fact, the speed limitations of the cars themselves would seem alone likely to measure the rate of going. It looks, in fact, this time to be a new world's long-distance record for the mere trying and a temptation that makers and owners of fast cars on both sides of the water will find hard to resist.

The route presents few hills of any considerable grade. More than one-half of the circuit is downgrade. The balance is practically dead level and includes 11 miles of specially-laid cement highway. The parkway section is dished and banked upon all turns with easy grades approaching public highway and railway crossings. The splendid county and state roads embraced in the course will admit of speed well nigh as great as on the parkway itself.

A mammoth steel stand ten times the size of former ones is to be erected by the parkway corporation on the south side of the cement stretch 4 miles from its beginning. It will afford its occupants not only a bird's eye view for the entire 11 miles, but will enable them to see the racers at their highest speed on the easy "S" turns and as they negotiate the grades at the crossways.

In his enthusiasm A. R. Pardington thinks the parkway worthy of being dubbed "the plateaux racing drome" and is sure the spectator will yearn for a gentle balloon flight of a few hundred feet that would give him a view of the entire race, so free is the course from hills of pronounced grade.

Beginning at the Jericho turnpike and the Old Westbury road, the racers will speed over Hempstead Plains with not a vestige of shrubbery or any woods to cut off the view. The parkway also runs through the same kind of open country, affording an unbroken vision. Leaving the parkway and entering the public road at Bethpage the racers will encounter Manneto hill, hardly of sufficient grade to be worthy of a name. Then will come the only stretch of road at all dangerous and this by reason of the foliage of the Round Swamp and Plainview roads being thick and frequent turns admitting of but a short range of vision. There is ample shade from overhanging trees along the Jericho turnpike, but the road is very broad, permitting a view ahead of ample extent to insure safety in driving.

Along the parkway stretch there are two or three cement bridges and one span to carry the road over intersecting roadways and low places. The center of the parkway, it may be interesting to note, is being built first to insure early completion and a firm bed. Later, however, the road will be widened 6 feet on either side.

To describe more particularly the circuit chosen, the boundary of the course is the well-known Jericho turnpike, beginning at the old Westbury road about 3 miles east of Krug's Corner and running 10 miles east to the intersection of the Woodbury and Hicksville macadam road.

The western boundary of the course is composed of a portion of the old Westbury road running south from the Jericho turnpike to the Old Country road, and along

STRETCH OF PARKWAY THAT IS PRACTICALLY COMPLETED

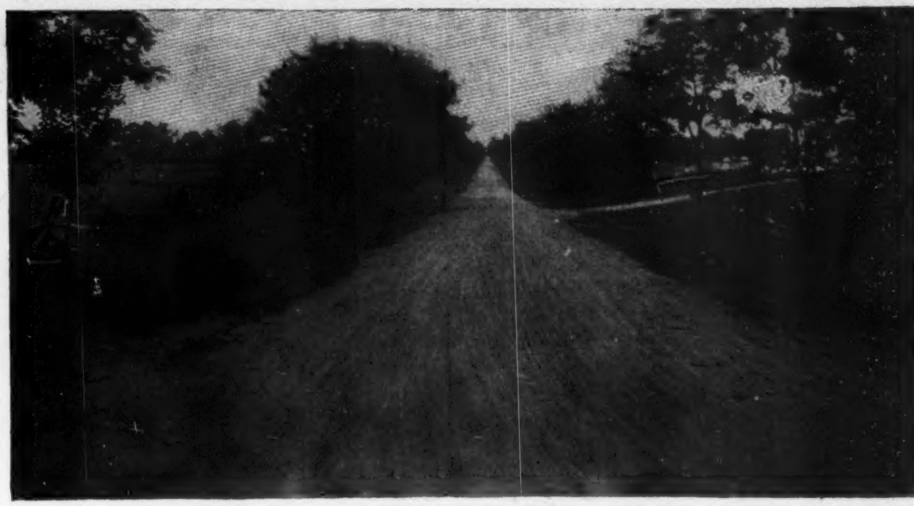
the Old Country road about 1/8 of a mile to Whaleneck avenue, thence south to the beginning of the motor parkway.

The southern boundary is made up entirely of the new cement parkway, beginning at Whaleneck avenue and paralleling an abandoned branch of the Long Island railroad known as the Hempstead branch, for a distance of nearly 11 miles to a small settlement called Bethpage.

The eastern boundary of the course begins at the termination of the cement parkway at Bethpage and runs north along Round Swamp road to its intersection with the Plainview road and along that thoroughfare to its intersection with the Woodbury and Hicksville macadam road, along which it continues to the Jericho turnpike, where there is a sharp left turn known as the "flatiron." From this turn the course practically coasts westward on Jericho turnpike for 10 miles back to the Old Westbury road and thence south to the beginning of the parkway.

There are eight sharp turns on the state and county road portions of the course, but the parkway turns are all beautifully rounded and banked. The surface of the cement is as smooth as a city concreted street and the possibilities for high speed are quite enough to satisfy the ambition of the most daring racing drivers in the world who will compete.

General Manager Pardington, of the Parkway corporation, who has charge of its building, says that it will be completed in ample time for the American cars to practice for the eliminating trials set for October 10 for a few days. The work is distributed among several contractors, each of whom has but a short section of road to complete. All of the crushed stone and cement necessary in the construction is upon the ground, together with the steel netting, which forms the foundation for the cement roadbed. The wire fencing which is to run along both edges has been contracted for. This fencing is about 5 feet and composed of ten parallel wires set close together and held in position by vertical wires about 12 inches apart. The toll bridges will be completed in time for the race. One of them is located near the Meadow Brook Hunt clubhouse, a famous and fashionable rendezvous for Long Island's elite colony.



PLAINVIEW ROAD WHICH FORMS PART OF COURSE

The course for the 1908 race is much more isolated than those previously used for Vanderbilt cup races in that no part of it passes through a town or village where crowds would naturally congregate.

ONLY THEORETICAL BOYCOTT

Paris, July 30—Since announcing an official boycott of the Vanderbilt contest, the attitude of the leading members of the French racing board appears to be one of complete indifference regarding the quarrel between the American Automobile Association and the A. C. A. Instead of that righteous indignation which in certain quarters we are given to believe exists in the French club against the action of the Vanderbilt cup commission in announcing its race under independent rules, the Frenchmen declare, in substance, that they have put their protest on record and have no desire to be troubled further in the matter. The French racing board has enough troubles of its own on hand to prevent it having any very strong feelings on a quarrel between two motoring bodies several thousand miles away. It is freely recognized in Paris that the boycott is more theoretical than practical. To put it in the vernacular, "it is for to laugh." Every manufacturer, even though he voted the protest, is aware that if he desires to enter the Vanderbilt cup race there is nothing whatever to prevent him. The fear that the French cars would be at a disadvantage, which was doubtless felt by certain constructors a few months ago, is no longer a bogy. Instead of being slower than last year the cars have proved, in a brutal manner, that they are not only faster but too fast, at least 25 per cent of the French failures being due to speeds that tires could not maintain. Speaking to one of the leading officials of the sporting commission, the representative of Motor Age asked what steps would be taken if French firms sold their cars to be raced by private owners, or handed them over to their American agents to enter. Without hesitation the reply came: "We could do nothing whatever in such a case." It is well known that negotiations are pending and about completed for the sale of the Mercedes victorious in the grand prix and for the transfer of the services of the winning driver to an American sportsman who would enter them in the Vanderbilt race. Although Germany was one of the protesting parties, its officials can find no grounds whatever for objecting.

SHARP TURN ON PLAINVIEW ROAD

AT JERICHO TURN, LEADING TO JERICHO TURNPIKE

KNOX WINS SEVEN RACES AT WILDWOOD N. J.

WILDWOOD, N. J., Aug. 3—The straightaway racing of the local club which was postponed from Saturday because of the weather conditions was held today. The Knox collared everything in sight in the classes to which it was eligible, the Buick getting away with the small-car classes and the Stanley having a clear field in the steam events. Between them Bourque and Dennison captured seven races with their twin Knoxes, including the free-for-all, in which Bourque finished second to Dennison. The Knoxes also ran one, two in the mile and kilometer time trials, Dennison beating out his confrere in both in the fastest time of the day—.47$\frac{2}{5}$ and .28, respectively. The Stanley was the place car in both trial heats of the free-for-all, but in the final the flying back of the hood of Vennell's car, which had been imperfectly fastened, put its driver temporarily *hors du combat* and rendered necessary the services of a physician to sew up the resulting cut in his head.

The races were not nearly so interesting as those of last Fourth of July, Saturday's rain resulting in the scratching of many entries and the absence of the Philadelphia officials, making the work of the native understudies seem painfully slow in comparison.

The chapter of mishaps, which began with the accident to Swain and Overpeck on Thursday, which in turn caused a lack of interest in Friday's run and a consequent poor turn-out, and was followed by Saturday's rain, was continued this morning when Richard Sellers, chairman of the contest committee of the Quaker City Motor Club, had his right shoulder dislocated by being catapulted from the Pennsylvania Vanderbilt car driven by Richard Williams. While speeding back toward the start the top of the battery box fell into the open machinery and blocked the brake clutch. The choice lay between a dash into the ocean and a sharp turn up a cross street. Williams preferred the latter, and the car turned a complete flip-flop. Sellers' dislocation was reduced by a local surgeon. Williams got off with a few scratches. The car was badly smashed, taking a much-needed star card from an already meager entry list. Still, despite these mishaps, the Wildwoodians went ahead with their program and the racing itself resulted in some good marks being hung up. The Knox, of course, was in the limelight at all times and the work of Bourque and Dennison was highly commended.

Inability to true up Frank Nordell's Chadwick after a mud plug from Philadelphia on Saturday morning, took another fast car out. These mishaps gave the Knox contingent a clear field, which it was not slow to take advantage of. The course was fast, and considering the quality and power of the contestants the times made compared favorably with the .42$\frac{3}{5}$ record of the Fiat on the Fourth of July. Summary or the races:

FREE-FOR-ALL FOR STEAM CARS

Car	Driver	Time
1—Stanley	D. Walter Harper	*
2—Stanley	Walter Vennell	*

* No time taken.

FREE-FOR-ALL, FIRST HEAT

1—Knox	W. Bourque	:49 4-5
2—Stanley	D. Walter Harper	:50

SECOND HEAT

1—Knox	A. Dennison	:50
2—Stanley	Walter Vennell	:53

FINAL HEAT

1—Knox	A. Dennison	:50
2—Knox	W. Bourque	:50 4-5

GASOLINE STOCK CARS, $1,251 TO $2,000

1—Buick	Ed Wilkie	1:19
2—Middleby	W. Smith	1:19 2-5

GASOLINE STOCK CARS, $3,001 TO $4,000

1—Knox	W. Bourque	:50 4-5
2—Parkin	J. W. Parkin	:51 2-5

FOUR-CYLINDER GASOLINE STOCK CARS, OVER $4,000

1—Knox	W. Bourque	:54 2-5
2—Stearns	H. A. McNichol	:56

GASOLINE STOCK CARS, $2,001 TO $3,000

1—Knox	W. Bourque	:54 2-5
2—Sharp-Arrow	W. H. Sharp, Jr.	:55 2-5

GASOLINE STOCK CARS, UNDER $1,250

1—Buick	Ed Wilkie	1:22
2—Middleby	W. Smith	1:22 2-5

SIX-CYLINDER GASOLINE CARS

1—Knox	W. Bourque	:50 4-5
2—Parkin	J. W. Parkin, Jr.	:51 2-5

MILE TIME TRIALS, OPEN TO ALL

1—Knox	A. Dennison	:47 2-5
2—Knox	W. Bourque	:48 4-5
3—Parkin	J. W. Parkin, Jr.	:50 2-5
4—Sharp-Arrow	W. H. Sharp, Jr.	:53
5—Buick	Ed Wilkie	1:08

KILOMETER TIME TRIALS, OPEN TO ALL

1—Knox	A. Dennison	:28
2—Knox	W. Bourque	:29 1-5
3—Parkin	J. W. Parkin, Jr.	:30
4—Stanley	D. Walter Harper	:31 3-5
5—Buick	Ed Wilkie	:41

Rain Forces Postponement

Wildwood-by-the-Sea, N. J., Aug. 1—A decidedly "mean rainfall" put the kibosh on today's sprints on the Central avenue boulevard, disappointing the tens of thousands who lined the course in anticipation of seeing some fast work. No rain fell after midday, but the course was so slippery and treacherous that the officials wisely decided, after sounding the various competitors, to postpone the events till Monday. Practically every seat in the big grand stand was occupied and as the boulevard, as far as the eye could reach from that vantage point, seemed in excellent shape, there were murmurs loud and deep at the postponement. But neither the club, the officials nor the contestants were in a humor to take chances, and the decision went. Practically every contestant but the Knox contingent, which had engagements elsewhere next week, were satisfied that the course was dangerous this afternoon, and they finally consented to stop over with the rest, after several slow trips over the boulevard.

Up to date the affair has been a series of disappointments. Charles Swain and Dr. Overpeck, two prominent members of the Quaker City Motor Club, who were to act as officials at today's races, while en route in the former's Apperson Jackrabbit for this place late Thursday night, Overpeck driving, were compelled to make a quick turn-out to avoid hitting a lampless buggy which suddenly loomed up ahead of them in the darkness. The turn was so sudden that the car first skidded and then turned over, pinning its occupants beneath it. Both are seriously injured, Overpeck internally and Swain with several fractured ribs. The unlucky pair managed, after a lot of hard work, to squirm out from beneath the car, but lay alongside the road till daybreak, when a truck farmer on his way to market discovered them and, flagging a Philadelphia-bound train, got them aboard. They were taken to a hospital.

The meeting to protest against the Frelinghuysen law, scheduled for last night, was postponed till tonight on account of the failure of many of the speakers to arrive. About 500 enthusiasts were present on the Ocean Pier tonight when Chairman Thomas Martindale called the meeting to order. A resolution presented by Carl A. Haswin and seconded by Senator J. Thompson Baker, was unanimously adopted. It reads as follows:

"Resolved, That we pledge our united efforts to secure just legislation as well as to remove this oppression and persecution; and be it further

"Resolved, That, failing in any other way to obtain the relief which we so much need, we will use our influence to secure the election to the next legislature of men who will pledge themselves to support what we believe to be just and merited legislative measures affecting motorists; and be it further

"Resolved, That we appeal to the press of New Jersey and Pennsylvania to support the motorists in their movement to obtain for themselves a square deal from the legislature of New Jersey."

Paul Huyette, in a 35-horsepower Peerless, won the invitation run from Philadelphia to this place yesterday afternoon, arriving at the finish on the dot at 5:15—the exact time decided upon previously by the contest committee.

JERSEY CALLS A CONVENTION

Newark, N. J., Aug. 5—New Jersey is to have a good roads and legislative convention of its own. It is planned to hold it at Atlantic City early in September, probably the 17-18. The co-operation of the farmers, as represented by the New Jersey State Grange, is to be asked. In view of the alliance completed at the Buffalo convention between the A. A. A. and the National Grange, the prospects of similar co-operation between the motorists and farmers in New Jersey are bright. The present unreasonable state motor vehicle law, which this year is keeping so many motorists out of the state, to the great loss of hotel keepers and general business, will also come up for discusion, with a view to amendment along sane and just lines at the next session of the legislature. The

decision to call the convention was made by the Associated Automobile Clubs of New Jersey at its meeting at Atlantic City last Saturday. It was further resolved to make every effort to organize motorists in localities where no clubs now exist, to the end that the state body may be strengthened, and carry with it the weight of larger numbers, and present a more general representation of the counties of the state at the convention and before the legislature next winter. There were several changes made in the official slate at the meeting that will give the New Jersey Automobile and Motor Club, not only the largest motoring organization in the state, but also one of the largest in the country, the leadership in the administration of the state body. W. C. Crosby, vice-president of the club in question, was chosen president in place of George W. Post, of the North Jersey Automobile Club, of Paterson, resigned, and H. A. Bonnell, former secretary of the same club, a man of national reputation as an organizer and executive officer, was persuaded to get into harness again and assume the office of secretary-treasurer. It is probable that John W. Griggs, former governor of New Jersey, and more recently United States attorney general, will have charge of the suit that is to be brought next November to test the constitutionality of the Frelinghuysen law.

TRADE IN RACING GAME

New York, Aug. 3—At a meeting held in New York last Friday, a local racing organization of tradesmen was formed, to be known as the Metropolitan Motor Association. Its charter membership is made up of three importers, three manufacturers and two local dealers who have been prominent in racing in the metropolitan district. The officers chosen were: President, C. F. Wyckoff; vice president, E. R. Hollander; treasurer, Harry S. Houpt.

The objects of the association are stated to be as follows:

First—To support only such contests held in and within 75 miles of New York city which have for their first object the stimulation and growth of public interest in motoring events which shall benefit the sport and industry as a whole.
Second—To eliminate from such contests inexperienced drivers and officials.
Third—To regulate the number, length and condition of contests and races.
Fourth—To safeguard the interests and safety of all contestants and the public by rigid supervision of courses over which contests and races are to be held.

In its official announcement the association declares that "the statement recently made in some of the New York papers, that this organization was to be formed to oppose the A. A. A. or A. C. A., is entirely erroneous, and is denied by the president of the association. It is hoped that some amicable arrangements can be arrived at whereby all interests, including clubs, associations and contestants can get together on a proper basis without friction." The association plans to promote a race meet at the Brighton Beach track on or about Labor day.

THOMAS FLYER IN PARIS

French Gives the Winner of New York-Paris Race Warm Reception at End of Contest

Paris, Aug. 3—Special cablegram—Nothing could stand out in sharper contrast than the reception accorded the winning Thomas car on its entry into the French capital on Thursday and that which the Germans received a few days previous. "Vive le voiture Americain!" was the popular cry of the day that greeted the triumphant American crew all the way from Meaux, 25 miles out of the city, where a large escort met the Yankees, until they arrived in front of the Matin office. When at 8 o'clock in the evening, the Thomas, with the stars and stripes floating out behind, made its way to the Place de l'Opera the enthusiasm was unbounded. In front of the Cafe de la Paix a gendarme stopped the car and placed Schuster under arrest for not having a light. Protests and explanations were unavailing. A cyclist offered the lamp from his machine, but it could not be detached, so that the whole bicycle was lifted bodily into the car.

At the Matin offices an informal reception was tendered George Schuster, George Miller, Captain Hans Hensen and George McAdam, staff correspondent of the New York Times. Not a few Americans who had seen the Thomas start from Times Square, New York, on Lincoln's birthday, pressed forward to greet the different members of the winning crew, and congratulations were showered upon them.

It is understood that the French racing committee will convene in a few days to make a formal award of the prizes, and no doubt is entertained here that the first prize will go to the Thomas and the second to the Protos, despite the formal protest addressed to the committee by the Berliner Zeitung am Mittag that nothing less than the first prize should be awarded the German car, a view that is upheld by the Imperial Automobile Club, which may also address formal representations in its own name. There is a general impression here that the French committee does not hold that the Protos disqualified itself by shipping the last 1,200 miles across the American continent, but that the matter of its shipment by rail and the Thomas' going to Alaska were disposed of by the allowance of 30 days.

Reception for Thomas

New York, Aug. 3—Upon receipt of the cable advices that the Thomas had reached Paris a winner in the round-the-world race by the ample margin of 26 days, Harry S. Houpt and John Elliott Bowles, who were greatly responsible for the entry of the Thomas car, were the recipients of general congratulations from American motorists, many of whom declared the trip was the most remarkable evidence of American perseverance and grit and the most conclusive demonstration of the ability of the modern motor car that could be afforded. There is a plan afoot to tender the winning crew a reception on its return here in order to give the men an opportunity of telling of some of their experiences at first hand to those who have followed their adventures through the columns of the newspapers.

When interviewed at Buffalo after learning of the arrival of the Thomas at Paris, E. R. Thomas said: "In the New York-Paris race, not only an American car, but also American tires scored an important triumph, the Diamond quick-detachables used giving excellent service. While the Thomas stock car won the race around the world, covering a distance of 13,431 miles by the comfortable margin of 26 days, it is particularly gratifying to me to know that the car was the only one which went the official route. The Thomas traveled 2,385 miles more on land under its own power, and 3,246 miles more at sea—a total of 5,031 miles more than its nearest competitor, which shipped from Pocatello, Idaho, to Seattle, thus avoiding the severest portion of the trip across the American continent."

PREMIER STILL CENTURYING

Indianapolis, Ind., Aug. 4—The Premier century car which set out June 1 to do 100 miles a day for 100 days, completed its seventy-fifth century this week, although running only a little over 60 days. This is accounted for by the fact that the car in its daily runs has invariably made somewhat in excess of 100 miles, and on many days considerably above this figure. Leaving at the end of the Glidden tour, at Saratoga Springs, the car went by a 2 days' trip through Albany and Springfield to Boston, and has since made trips to Fitchburg, Narragansett Pier, Plymouth, Fall River, Leominster, and a number of towns in eastern Massachusetts, and Rhode Island, leaving the Hub Sunday morning and going to New York to remain during the balance of this week. No adjustments or repairs of any consequence have been made on the car, it being given only such attention as a car in ordinary service should have.

ANOTHER CUP ENTRY

New York, Aug. 5—Special telegram—The Chadwick Engineering Works, of Pottstown, Pa., has entered a six-cylinder Great Chadwick in the Vanderbilt cup race. The motor will be of 5-inch bore and 6-inch stroke. There will be four speeds forward, 112-inch wheelbase, 56-inch tread, 40-gallon gasoline tank and the car will weigh, equipped with special racing body, 2,550 pounds. The Mora six-cylinder already has been entered and it is understood that the Acme company will also be represented by a six-cylinder, making three six-cylinder cars thus far assured for the American motoring classic in October.

NEW START FOR POPE

Reorganization of Corporation Under Way—Will Use Hartford and Westfield Plants

Hartford, Conn., Aug. 3—The long-predicted reorganization of the Pope interests that was formally announced for the first time late last week, is now under way. Briefly stated, the plan is to eliminate the common stock of the old corporation entirely, capitalize the company's indebtedness to a certain extent, and confine manufacturing to the Hartford and Westfield plants, the latter of which is devoted to bicycle making. Articles of incorporation may be asked for under the laws of New Jersey or in the company's home state, the projected capitalization being $6,500,000, of which $2,500,000 is to be preferred stock and the remainder common. A small coterie of New York capitalists was apparently responsible for bringing about the reorganization at this time, a committee appointed from their number consisting of Harry Brommer, of Hallgarten & Co., Frederick H. Ecker, treasurer of the Metropolitan Life, and August Heckscher. It is understood that Mr. Brommer represents certain interests of the old company.

Not including the amounts due to companies, the capital stock of which is owned by the Pope company, the present indebtedness of the latter totals $1,640,000. There is now preferred stock of the face value of $2,391,000, and second preferred of the value of $8,625,100, outstanding, and the plan of reorganization is offered to the holders of such stock, based upon the deposit of their certificates with the Central Trust Co. of New York city. To actually begin business, notes to the amount of $800,000 will be issued in such amounts as the committee above named may deem necessary. These notes will be dated August 1, 1908, and will mature as follows: August 1, 1909, $267,000; August 1, 1910, $266,000, and a like amount 1 year later, the interest being at 6 per cent, payable semi-annually.

It is said that a syndicate has been formed to take up the notes, but information concerning its personnel is lacking at the moment. The notes themselves will be secured by a mortgage or deed of trust in favor of the Central Trust Co. and covering the property of the newly reorganized concern, then owned or afterward acquired.

The syndicate in question will hold voting trust certificates for new preferred stock to the value of $500,000, and certificates for $90,450 worth of common stock, beside the $800,000 issue of notes. Holders of first preferred shares will receive certificates for the new preferred stock to the value of 75 per cent of their old holdings at par, and 83 per cent in certificates of their old stock at par. Owners of the present second preferred stock will only receive 20 per cent of the par value of their holdings in new certificates. It is understood that the same personnel will be in control, namely, Albert L. Pope and Col. George L. Pope; Wilbur C. Walker and Charles E. Walker. The announcement of this proposed reorganization has caused a considerable stir in trade circles in the east and it will be followed with interest.

MAXWELL-BUICK COMBINE

New York, Aug. 3—Negotiations for the consolidation of the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., and the Buick Motor Co., of Jackson, Mich., which for some months have been more than merely whispered as being in progress, have reached now such an advanced stage that it is announced that the International Motor Co. is in process of formation with a capital of $25,000,000, made up of $11,000,000 common and $14,000,000 preferred stock. Preferred stock to the amount of $900,000 is shortly to be put on the market at 97½ with a share of common stock as a bonus by the underwriters of the scheme, who are connected with J. P. Morgan & Co., though the banking firm itself will not figure in the transaction. The attorneys engaged in the formation of the new company are Ward, Hayden & Satterlee. The junior partner is a son-in-law of J. P. Morgan. Another son-in-law of the noted financier, W. P. Hamilton, and W. P. Horn, a member of the staff of the banking house in question, are interested in the formation. So is Otto J. Merkle, of 40 Wall street, New York, who has back of him the Maxwell-Briscoe interests. It is planned to bring into the corporation a half dozen other plants in addition to the two named above. Options have been obtained on other concerns, including some producers of parts and raw material. The holders of Maxwell-Briscoe preferred stock will receive 2 shares of preferred stock of the new company and one share of common stock for each share of the original preferred stock. At present $660,000 preferred stock out of $750,000 authorized is outstanding, and $660,000 common stock out of $750,000 authorized is also outstanding. The prospectus issued estimates a possible production of 13,000 cars this year, including those already finished, and places the 1909 product conservatively at 15,000.

E. V. CO. MYSTERY UNSOLVED

Hartford, Conn., Aug. 3—It is understood that an order for the construction of fifty additional Columbia gasoline cars from the large stocks of parts of the defunct Electric Vehicle Co., has been granted and that Receiver Nuckols has issued a call for workmen to carry it into effect. Why the factory has been juggled with in the manner that seems to have characterized the negotiations concerning the future of the big motor plant during the last half year, is certainly a puzzle to Hartford interests.

TOLEDO PLANS A TEST

Dealers Are Promoting 3-Day Reliability Run, Taking in Columbus and Cleveland

Toledo, O., Aug. 3—Local dealers are arranging the first real reliability contest that ever has been held in the state in the shape of a 3 days' run from Toledo to Columbus, Columbus to Cleveland and back to Toledo. The idea is to run this endurance test about the latter part of August under the same rules as those that govern the Glidden tour. The rules will be more rigid if anything than any heretofore used by any club. Arrangements are being made at this time to secure the sanction of the technical board of the American Automobile Association for this run. Owing to the fact that the Toledo dealers' association is not yet affiliated with the national organization, there is some little detail to be gone through with before the official sanction can be obtained.

Up to the present time about ten cars are definitely promised, but it is hoped by the end of the week that at least ten more, or possibly twenty, will be entered. Coming as it does just before the G. A. R. convention here the tour will be used also as an advertising stunt for the big meeting and appropriate banners notifying the people of the holding of the convention will be carried by many of the cars. That Toledo may get as much advertising out of this tour as possible, the dealers are bending evey effort to inteest evey dealer to the extent of at least two or three cars.

Before the start, a pathfinding trip will be made over the course and maps, etc., will be prepared and furnished to each participant. Hotel accommodations as well as garage and supply arrangements will also be looked after by the committee in advance so that all will be smooth sailing on the day of the run.

The start will be made from in front of the Times office and the home control will be made there also. It is probable that the following route of about 500 miles will be followed in the main. Leaving Toledo the cars will pass through Bowling Green and Findlay, possibly stopping at Kenton for dinner. Bellefontaine will be next and then through Marysville into Columbus, where the night will be spent. Leaving Columbus the second day, Newark and either Mt. Vernon or Coshocton will be passed before the stop at Mansfield. Then on to Canton and Cleveland for the second night's stay. The third day's trip will be over the regular Toledo-Cleveland route, through Elyria, Lorain, Sandusky, Monroeville, Bellevue, Fremont, Woodville, and into Toledo, where the cars will be checked out in front of the Times.

The question of combining a tour of individual owners along with these Toledo dealers' tour has been taken up, and the

tourists' committee of the Toledo club will hold a meeting Thursday night before taking official action in the matter. The officials of the Toledo Automobile Club are very much interested in the proposed run, because they expect to use it as the means to the improvement of the bad Ohio roads. The proposition has been under consideration for some time, but it was not until recently that its promoters were ready to spring it. Now, however, the idea seems to impress everyone favorably and there is no reason why the contest should go.

OHIO LIKES SCHMIDT LAW

Toledo, O., Aug. 3—The commissioners of Lucas county will take action under the new Schmidt law which was passed by the closing sessions of the Ohio legislature, as soon as correct copies of the law can be obtained, and will probably be about the first county in the state to avail itself of the benefits of that statute in road repairing. The commissioners have long recognized the vexatious red tape provisions which made the old law ineffective, and have anxiously awaited the coming of a time when road repairing could be done on business principles. The Schmidt law does away with all the red tape incidental to road repair, and permits the county to keep the turnpikes in good condition at a minimum cost to the taxpayers. Under it the commissioners may levy a tax not exceeding three-tenths of a mill for road repair purposes, which in this county will net an income of about $27,000 per year. Under the old law it was next to impossible to repair small holes in the highway until they became large ones, with the result that good pikes have had to go to ruin, when a small expenditure at the right time would have saved them. The old law required competitive bidding on all repair jobs, after long and expensive advertising, and many times the expense of the red tape cost far more than the entire repair work would have cost if done at the right time. The Schmidt law changes all this, and under its provisions the county engineer examines all roads and submits a report of the estimated cost of keeping them in repair for the year. The commissioners then advertise for such an amount of material as may be needed, as shown by the engineer's report, to be delivered at such places, in such quantities, and at such times as they may see fit. The repair work may then be done by day labor, or they may let contracts for the caring of roads by divisions. For instance, each section of road may be let by contract to a man living thereon, he keeping his section under supervision and making immediate repair when needed with the materials furnished by the commissioners. Lucas county will try the new law out thoroughly at once, and all agree that it presents opportunities for road repair never before available here.

TIPS ON OTHER MARTS

Federal Government Tells of Motor Trade Opportunities in Germany and Australia

Washington, D. C., Aug. 1—The federal trade promotion bureau is devoting a great deal of attention to the exploitation of motor cars in the various foreign countries. Numerous facts and figures regarding certain markets have lately been received, from which the following information has been culled:

Breslau ought to be as good a field for the sale of American motor cars as other German cities. Among its half a million people there is a large wealthy class. The streets, wide enough for traffic, are well paved, and excellent roads radiate in all directions. There is strong competition, however, and success will depend on prices and methods. In addition to the pleasure cars, a number of taxicabs and commercial vehicles are in use in Breslau.

As the duty on the chassis for motor cars imported into the commonwealth of Australia has been reduced from 35 to 5 per cent ad valorem, an opportunity seems open for increased sale of American cars in Tasmania and Australia. The former duty was 20 per cent ad valorem on all imported motor cars, inclusive of both body and chassis. The new tariff raised this duty to 35 per cent, but a later amendment, while leaving the 35 per cent duty on the body of the car, reduced the duty on the chassis to 5 per cent and made the English chassis free. As by far the greater part of the value of most cars, probably two-thirds, is comprised in the chassis, it is thus evident that, considering the motor car as a whole, a substantial reduction has been made in the duty. The chassis need not be separated from the body of the car when shipping it, but on arrival at destination the value of the chassis will be separately appraised.

Tasmania is a country of fine scenery and exceptionally good roads, and, now that the tariff on foreign cars has been materially reduced, would probably prove a good field for American motor cars if only American manufacturers had agents in Hobart, or even in Melbourne, competent to explain their advantages as compared with the better-understood cars of English and French manufacture, which are represented by direct agents, and if only there were a few American mechanics there competent to do whatever repair work is necessary, and if proper facilities could be afforded of replacing parts which may become broken or worn out. The Tasmanians, while admiring the design and construction of American cars, know they would have to rely on themselves to keep such cars in order, and that if anything should go wrong with certain parts it might take months for new parts to be obtained. The facts that American cars are not fully understood in Tasmania as compared with the English and French cars, and that the parts are difficult of replacement or repair, have created a prejudice against them. Moreover, most of the cars in use in Tasmania which have come from the United States are cheap cars, well worth what they cost, no doubt, but which are unfortunately compared with the higher grades and more expensive English and French cars.

It does not appear to be appreciated in Tasmania that American cars selling for $2,000 and upward possess equal if not superior merit to the high grade cars of the countries named. The first motor cars which went into Tasmania were cheap American makes, which met with poor success on the hilly roads of the island, easily got out of order, and were difficult to repair, thus creating a prejudice against them which will take time and work to overcome. More recently, however, some improved kinds of medium-priced cars have established a favorable reputation for themselves, and especially distinguished themselves in a reliability run between Launceston and Hobart last November. Five of these cars, of 9 horsepower each, were entered in the race, and four received certificates, their time ranging from 5 hours 4 minutes to 5 hours 58 minutes for the 120 miles.

ONLY ONE CHICAGO SHOW

New York, Aug. 5—Special telegram—There will be only one motor car show in Chicago next winter. The show committees of the National Association of Automobile Manufacturers and the American Motor Car Manufacturers' Association, Tuesday morning conferred here and reached an understanding relative to the Chicago show situation. It will be remembered that the A. M. C. M. A. was not exactly satisfied with the previous manner of allotting spaces and it was made known that unless its members received more consideration the association might conduct its own exhibition in Chicago. Tuesday morning the show committees of the two organizations held a session. In accordance with the resolution adopted at the July meeting of the N. A. A. M. show committee, a new method of space allottment was submitted and this met with acceptance from the A. M. C. M. A. committee. Briefly stated, the spaces are divided into four classes, and the selection of positions is to be determined by lot. Providing there are more applicants for spaces than can be accommodated in any class, the executive committee of the N. A. A. M. will classify the applicants, and in so doing N. A. A. M. members will have first choice, and A. L. A. M. and A. M. C. M. A. members will be given second choice, though the committee will be guided further by the number of models produced by the applicants, the number or earlier shows at which the applicants have exhibited, and the size of the space occupied thereat.

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STATISTICIAN'S DEDUCTIONS OF THE 1908 GLIDDEN TOUR

BUT twenty-one of America's 205 makers of motor cars competed in the Glidden and Hower tours just completed, a very low percentage for a national tour and practically the only tour of the season. Of the twenty-one makes of cars represented eleven were firms that have been contesting in previous Glidden tours and ten firms made their first effort to secure either the Glidden or Hower trophies. The eleven old firms had in all twenty-five cars in the fray, of which number twenty checked in at Saratoga with perfect scores.

80 Per Cent Perfect Scores

THIS is the most astonishing phase of the tour that twenty out of twenty-five, or 80 per cent of the machines entered by makers with previous Glidden experiences should not lose one of the 1,000 credit marks they started out with. In contrast with this record, which is without parallel in any other tour in America or Europe, is the story of the ten new firms that made their initial try for Glidden or Hower honors.

38 Per Cent New Comers Perfect

OF the ten firms in this class, but one took all of its cars through perfectly, against seven perfect score firms in the ranks of the old competitors. These ten newcomers brought twenty-one cars to the starting line, only eight or 38 per cent of which reached Saratoga with their 1,000 credit marks all clean. Eighty per cent of the old makes were clean; 38 per cent of the newcomers. Why this tremendous difference? The new makers were as familiar with the rules as many of the older ones. The old and new were on a par in this respect. Both were on a par in that they covered the same route, covered it on the same schedules, covered it with the same loads and under identical conditions. The differences must have existed in the drivers and in the cars.

New Comers' Cars and Drivers

IT was not all with the drivers, although it is true that nine of the thirteen perfect scores lost by the newcomers were lost by drivers who were piloting their machines for the first time in a Glidden contest. The other four perfect scores lost were dropped by old road drivers; and on every hand it was admitted that the cars were at fault, being too weakly constructed, in the places they broke, for continuous road usage. The nine perfect scores dropped by new drivers in the newcomers' ranks is sufficient to impress upon manufacturers the importance of experienced pilots in a hard test, but the drivers must not be blamed for all, the cars must rightly bear their share. The three broken springs, the two wrecked wheels, the two broken axles, the two cases of motor troubles, the broken frame, the broken transmission and the generally broken up car were not all due directly to road recklessness bred of inexperience and grand stand desires. A good deal of it was—but not all.

Makers Admit Their Shortcomings

NOT a few of these makers admitted on the tour that such and such parts of their cars were too weak; others were previously unaware of the shortcomings of their machines, and agreed that the tour had taught them a lesson that would save thousands of dollars to them during the 1909 season; and of course there were the few—wise ones—who ascribed their hard luck not to inexperience of the drivers or weaknesses in their cars, but to the perversity of fate, to the ignorance of road commissioners and to the general opposition of nature. Such excuses satisfy the originator of them, tickle the ears of a few non-suspecting ones but frequently fail deplorably in influencing the masses.

NO matter why they lost, the fact is a record of history that they lost, and many of those who read will only carry off the little fragment "they lost," forgetting entirely the "why" and "wherefore" that caused the loss. The fortunate winners will have "perfect score" carved equally deep in these same human beings' minds and with "perfect score" goes the omnipotent reason—the car did it.

Experience the Great Tutor

THIS year's Glidden with its lesson of the "old" and the "new" is enough to emphasize on makers the cardinal importance of participating in contests because of the ability of such contests to discover weaknesses in cars and shortcomings in drivers. National contests will continue, makers will continue to compete in them, and makers will continue to carry off perfect scores; but the other makers must rest assured that they cannot jump into the contest zone without experience and without trained and tried drivers. The perfect-score laurel is one of car design and construction, coupled with the driver quantity, and only the happy combination of both will bring the coveted guerdon. But eight of the twenty-one makers who competed in the Glidden and Hower runs brought through all of their entered cars perfectly, and of these eight seven were in the ranks of the old timers and one from the new forces.

Seven States in Honor Roll

GEOGRAPHICALLY considered this year's Glidden was to the lake and central states, there being but seven out of the forty-six states represented—New York, Ohio, Indiana, Michigan, Illinois, Massachusetts and Connecticut. Of the fifty-six cars—contestants, non-contestants and officials—that left Buffalo, New York, Ohio, Michigan and Indiana furnished thirteen each; Massachusetts had two and Illinois and Connecticut one each. Ohio led with nine perfect scores, New York carried off eight, Indiana had five, Michigan four and Massachusetts two. Of New York's thirteen twelve were contestants, making the state's percentage $66\frac{2}{3}$. Ohio's thirteen were all contestants, so the state's percentage is 69.1. In Michigan's ranks six of its thirteen cars were non-contestants, so that four of its seven contestants or 57.1 per cent were perfect. Indiana fared worst; eleven of its thirteen cars were contestants, and but four of these or 36.3 per cent came through clean. Illinois lost its only contestant and wound up with 0 per cent perfect, and in contrast with this is Massachusetts, with two contestants and both perfect, giving the state 100 per cent.

Fifteen Cities in Competition

VIEWED from the standpoint of the cities in which the cars were built fifteen cities in all were represented. Of these Indianapolis took the premier position, supplying eleven of the fifty-six cars that left Buffalo. Buffalo supplied seven; Lansing, Mich., six; Elyria, O., six; Syracuse, N. Y., four; Cleveland, O., four; Dayton, O., three; Pontiac, Mich., three; Detroit, Mich., three; Kokomo, Ind., two; Rochester, N. Y., two; Chicopee Falls, Mass., two, and one each from Saginaw, Mich., and Moline, Ill.

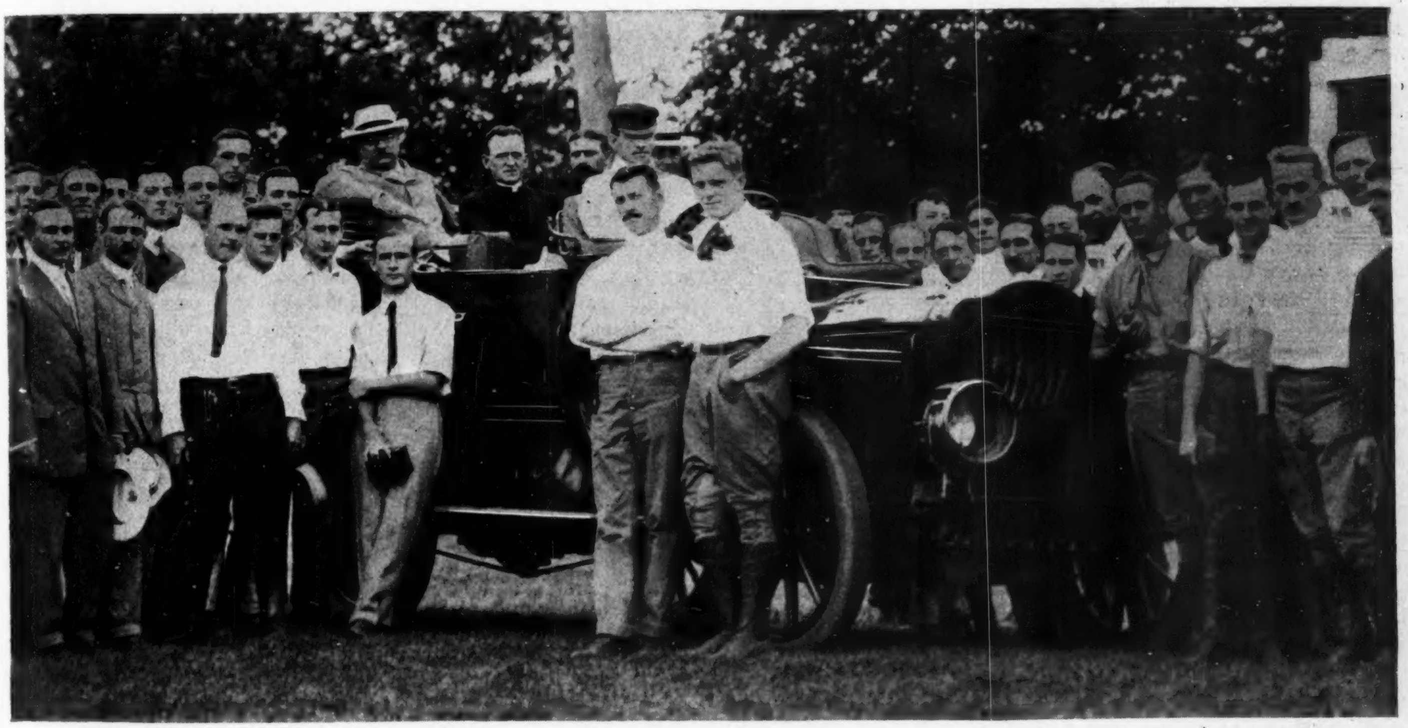
The Central Glidden for 1909

ALTHOUGH the tour embraced country east of a vertical line through Erie, Pa., but sixteen of the fifty-six cars constituting the tour were manufactured east of that line—is there any reason why the 1909 Glidden should not be run exclusively in territory west of the Detroit or Chicago verticals? The lakes and central states merit the 1909 Glidden because of the assistance they gave the 1908 and 1907 Glidden and Hower contests.

CURRENT COMMENT

AS usual Chicago comes to the front with something unique in the way of competition that is of interest to the motorists in general. This time it is a demountable rim test, originated by the Chicago Motor Club and believed to be the first of its kind in the country, if not the world. The object of this test is to prove to the public the utility of this comparatively new device and the motor club is going at it the right way, for there is nothing that impresses the public so much as an actual demonstration. There are five entries in the Chicago event and the rims will be shown in actual road use, each of them being changed inside 40 miles and then the cars run the remaining 60 to prove the work is well done. It is such demonstrations that are of value to motoring, far more so in fact than track racing.

WITH the Roosevelt administration on its last legs, so to speak, it is gratifying to learn that the president is at last becoming converted to motoring. He has put up a strenuous battle as is his wont, but like others even the mighty Roosevelt has been forced to capitulate at last. If it was not known that the president had become converted it would naturally be supposed that when he pays a visit to the encampment of a squadron of cavalry, situated within a few miles of his home, he would travel on horseback. But, as a matter of fact, when he went to inspect the summer camp of Squadron C at Huntington, L. I., last Saturday, he traveled in the government White steamer. There can be no doubt that the president is gradually coming to like the motor car almost as much as he does horses—at least he uses the one quite as much as the other. Each Sunday, for example, he rides with his family to church in the government White, in this way not only publicly displaying his conversion to motoring but also placing the seal of his approval on the growing custom of going to church in a motor car, concerning the propriety of which there has been doubt among conservatives.



PRESIDENT ROOSEVELT BECOMING A CONVERT TO MOTORING

ON PAGE 7, column three, line twenty-three, Motor Age of July 16, 1908, in the report of the Glidden tour run from Cambridge Springs to Pittsburg appeared the word "tow" in connection with the Franklin, Haynes and Studebaker cars in climbing the Kennedy hill a couple of miles out of Meadville. The word "tow" as used was intended to convey the meaning of "passing" another car on the hill, whereas not a few readers interpreted it as meaning that the Franklin car literally pulled with a rope or other means the Haynes and Studebaker cars on the steepest part of the hill. The meaning intended was that the one car passed the other two on the steepest part of the hill, the Motor Age correspondent being half way up the hill and not 30 yards from the point where the "passing" occurred. The word "tow" has frequently been used in the sense of "passing," and it was with this meaning it was then used.

THE west long has wanted the Glidden tour, and Chicago in particular has been hot in pursuit of this plum for the last 3 years. Now Chicago and the west have a chance to make good their claims, for it has been practically decided that the next A. A. A. reliability shall start from Chicago and go west. That decision, however, is only the first step in getting the plum. There now faces the westerners the task of convincing the A. A. A. that it can handle such a gigantic motoring event as the next Glidden is sure to be. Routes must be laid out, hotel accommodations found for the motoring caravan, and the entire west must blaze with enthusiasm. All these things cannot be done in a minute and it will be a wise west indeed if its inhabitants take time by the forelock and learn the lay of the land before snow flies in order that the A. A. A. touring board shall know where it is at when it comes time for final action in the matter. Convinced of the sincerity of the west and also its ability to handle the tour, the A. A. A. will not be slow in acting upon the invitation to send the affair west.

MOTOR ROW FIELD DAY

Chicago Dealers Take Vacation and Prove They Have Not Lost Their Athletic Skill

Chicago, July 31—At this lax season of the year one cannot blame tradesmen for relaxing a bit and mixing some pleasure with their business life. At least that is the way the Chicagoans figure and that was the reason that motor row field day became a reality. So many ex-athletes are mixed up in the local trade that for some time there have been all sorts of arguments as to the former prowess of some of those who used to shine in cycling, baseball and other outdoor sports. This finally resulted in the suggestion that a field day be organized in which those who used to be could back up their assertions. Joseph F. Gunther of the Apperson, O. G. Temme of the Triple Action springs, Paul Picard of Palmer & Singer and Thomas J. Hay of the Ford set the ball in motion and Temme was made the chairman of a very active committee of one to organize the athletic festival among the dealers.

A card consisting of nine events and including golf, cycling, baseball, shooting, tug of war, sprints, bowling and pool was arranged and there was a scurry for prizes. The Goodyear people furnished the baseballs and put up a couple of dozen golf balls for prizes in that event. The Goodrich company also furnished golf balls while other contributions were sent in. Paul Picard offered a trophy for the individual champion and George G. Greenburg hung up three medals for prizes in the bicycle race.

With such an attractive outlook it was an easy matter to get entries and the final list showed ninety-two nominations, with baseball of course attracting the majority.

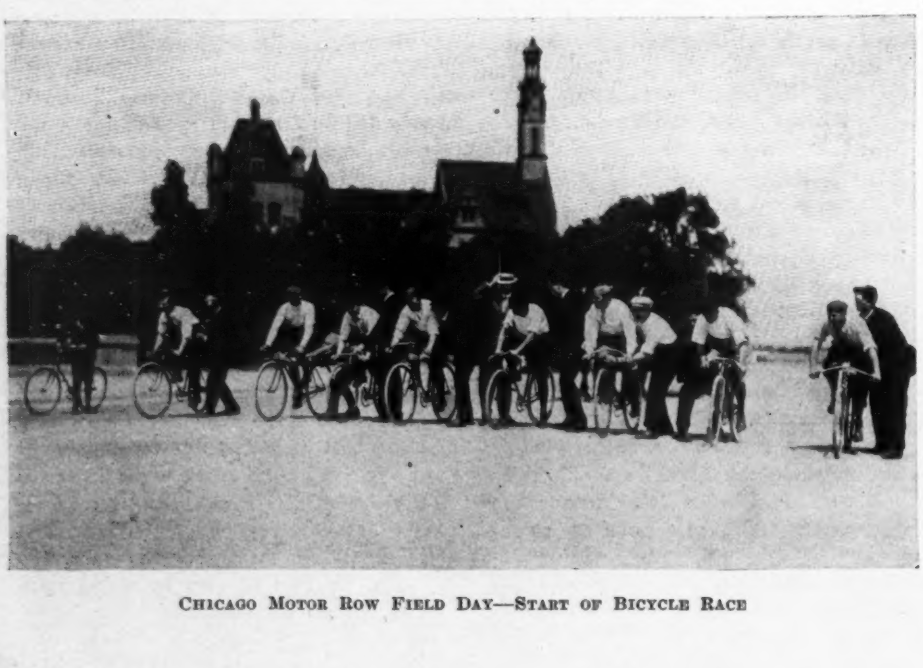
The field day was held yesterday and the start was made from the New Southern hotel in Michigan avenue and Thirteenth street, the contestants being driven to Jackson park, where most of the events were to be held. Golf naturally was first on the program, but the entry was a slim one, only seven making the nine-hole circuit. Of these Berne Nadall, inventor of the Nadall demountable rim, proved best, beating F. H. Trego of the Apperson by one stroke. Then everyone hastened to the lake front for the ½-mile bicycle race which had attracted such old time cycling stars as John T. Fisher, Harry W. Cooper, F. W. Osmun, A. E. Wood, A. C. Van Nest, A. J. Nicolet and C. F. Van Sicklen. The start was from a bridge and there was a half gale blowing on the riders' backs, but even under such favorable conditions no one looked for the winner doing :55⅗ for ½ mile from a standing start. Yet Cooper did this, beating Fisher 6 inches, with Van Nest at Fisher's front hub.

Following this was the 100-yard foot race which went to F. H. Suter of the Excelsior Automobile Supply Co., which also produced Cooper. The fat men's 5-yard run went to A. Sorenson, who weighs 260 pounds.

From Jackson park the contestants drove to the Chicago Gun Club at West Pullman and here C. A. Tilt, manufacturer of the Diamond T, demonstrated his superiority at the traps by breaking seventeen targets out of a possible twenty-five. Lunch was had here and after that the party drove back to Jackson park for the baseball game and the tug of war.

Supper was had at the Drexel, where the bowling and pool matches took place in the evening, A. J. Nicolet of Ralph Temple's establishment proving best at tenpins and Tilt winning at pool.

Picard's trophy for the best individual showing was awarded to Cooper for his victory in the bicycle race, running second in the 100-yard dash and for his work on the diamond. In the baseball game Cooper captained the winning team and his individual work resulted in three home runs and two other tallies.



CHICAGO MOTOR ROW FIELD DAY—START OF BICYCLE RACE

MILLIONS FOR ROADS

Los Angeles Decides by a Big Majority To Spend $3,500,000 on Highway Improvements

Los Angeles, Cal., July 31—By a vote of 26,115 to 8,142 the people of Los Angeles decided yesterday to expend $3,500,000 on good roads with the city of Los Angeles as a hub to the many spokes. This means 307 miles of the finest highway which modern engineering has been able to design. In every direction out of Los Angeles, leading to every incorporated town in this county, there will soon be macadamized highways as smooth as a city street, a paradise for motorists.

The bond issue which has just passed by such a large majority was brought about by one of the most vigorous campaigns ever waged in this country. Thousands of dollars was spent boosting the issue and the vote was phenomenal for a strictly bond issue. For weeks preceding the election meetings were held nightly in all parts of the county. It seemed that everybody wore a good roads button and the man who was so small as to vote against the tax of 40 cents on a $1,000 property value was so ashamed of the fact that the writer failed to meet a single person who would acknowledge being against the issue.

No election ever went off with more of a hurrah. Every motor car in town—and there are 6,000 in this city alone—was decorated with good roads flags yesterday and 200 machines furnished by the local dealers carried the voters to the polls. Every horse-drawn vehicle was decorated with flags and even the street car company entered into the spirit of the day, each electric car on every line having been decorated with half a dozen flags before being sent out on the early morning rounds by the company.

The country vote was overwhelmingly for good roads. It was expected that it would be up to the city vote to carry the election, but the vote in the country was 12,416 to 2,710 against 13,699 to 5,432 in the city. These figures are not absolutely correct, as a few outlying districts off the railroads have not reported, but this scattering vote will be not more than a couple of hundred.

Pomona was the only town of any size to put itself on record against better roads. This came as a surprise, as Pomona will reap a great benefit. But the Pomona rubes can be forgotten in view of such votes as 120 to 1 in Altadena, 50 to 1 in Arcadia, 441 to 22 in Hollywood and 2,142 to 506 in Pasadena. "Lucky" Baldwin, who owns the town of Arcadia, is on a still hunt for the one man who prevented Arcadia having a clean score. These are some of the improvements in prospect: Newhall grade will be abandoned. The 27½ per cent grade will give way to a 6 per cent climb, connecting with a 435-foot

tunnel through the big hill. Thirty miles of road will be improved from the city limits to Saugus, at an expense, approximately, of $400,000. Los Angeles and Whittier will be joined by a splendid highway. The Santa Susana pass road, from San Fernando road at McDougal street to Fourth street in Chatsworth Park, will be improved to the Ventura county line. Wilshire boulevard will be extended from the city limits to the intersection with Sunset boulevard, and that thoroughfare will be improved to the Soldiers' Home, making a fine drive to the Palisades at Santa Monica. Another fine beach drive will be made by way of Washington street, to be improved to the city limits of Ocean Park. Inglewood and Hermosa Beach will be reached from Los Angeles over a splendid highway. There will be a highway from Los Angeles to San Pedro and the harbor, following the old Wilmington highway. Branching from the San Pedro road a highway to Long Beach will be built through Compton. Pomona will be reached by way of El Monte and the old Spadra road. Covina will have a road from Los Angeles by way of the old San Bernardino road from El Monte. Alhambra will be placed on a solid highway. Beginning at Citrus avenue, Covina, the road will be continued to Lordsburg and San Dimas. Along the foothills from Pasadena, a boulevard 20 miles long will be built to Claremont. A road will be built into La Canada Cañon. Downey and Norwalk will be drawn closer to Los Angeles by a good road. Pasadena is already reached on a fine highway. Huntington drive will receive attention, however, and South Pasadena will profit by the plans of the highway commission. The road will be extended to Altadena. There will be a good highway to Redondo, taking in Gardena and other little cities. The finished roads are to be of protected macadam, with a rock foundation. There will be a central area of durable pavement. Where conditions make it necessary, the roads will be crowned with gravel.

DEMOUNTABLE RIM TEST

Chicago, Aug. 5—The first official test of demountable rims in this country, if not the world, will take place tomorrow under the auspices of the Chicago Motor Club, which is promoting a demonstration which will be in the nature of a contest in that a winner will be evolved by awarding first prize to the entrant who makes the four changes fastest. Four makes of demountables are represented on the five cars that are nominated—the Fisk, Diamond, Continental and Nadall. The Fisks will be fitted to Chalmers-Detroit and Knox roadsters; the Diamond to an Isotta-Fraschini touring car, the Continental to a Packard roadster and the Nadall to a Pierce-Arrow roadster. The cars will make the circuit of the Elgin-Aurora century course, the four changes being made before Elgin is reached by the contestants.

HAPPY DAY FOR KIDS

Motorists in Minneapolis Take Youngsters Out for Annual Trip—Good Time for All

Minneapolis, Minn., Aug. 3—An orphans' parade, which turned out to be an orphans' all-day picnic, occupied the time and attention of fifty Minneapolis motorists last Tuesday. Two hundred happy children, brought from all the orphan homes in the city, were given a day of sight-seeing and pleasure by the Minneapolis car owners. In the majority of cases, the owners themselves drove the cars, and took part in the entertainment of their young guests. The boulevards of Minneapolis and St. Paul, and the parks and pleasure resorts of the two cities, were all turned over to the parentless children, who, under the guidance of their nurses and the Minneapolis motorists, enjoyed the greatest day of their year. The owners had provided dinner for the homeless children at the new country clubhouse of the automobile club, on the bank of the Minnesota river, south of Minneapolis. The cars picked up the children at the various hospitals and homes and took them and the nurses who were in charge to Minnehaha boulevard and Lyndale avenue south, on the extreme southern edge of the city's park system. Here the cars from the various homes assembled and whirled away in a long and loosely formed parade to the country clubhouse, about 5 miles away. The children were given dinner there and enjoyed games and sports on the club grounds. At 2:30 they "re-embarked" and the cars ran back to Minnehaha boulevard, and thence to Minnehaha park. From Minnehaha the motor train took the beautiful river drive to Fort Snelling, thence into St. Paul, and over the boulevard system of that city. The return was made by way of Como park, which lies between the two cities.

Colonel Frank B. Joyce of the Minneapolis Automobile Club and Ralph W. Wheelock had general charge of the arrangements, and their call for motor cars met a ready response. Al Hazer was in charge of the children's outing at the country clubhouse, and was aided in directing the work of refreshing the children by George Seeley. The great success of the run has resulted in arousing enthusiasm among the motoring element of the Twin Cities and next year's outing ought to be twice as large and the club will work to make it that.

MORE GOOD ROADS ORDERED

Baltimore, Md., Aug. 3—Routes for the good roads in this state have been selected in six more counties by the good roads commission. The counties and routes selected are:

Worcester—From the Pocomoke to Mardella Springs, to Quantico, to Berlin and to Ocean City. From Berlin to Newark, to Snow Hill, to the south of the Pocomoke, to Pocomoke and then to the Somerset county line.

Wicomico—From Sharpstown to Mardella Springs, to Quantico, to Salisbury, to Allen. From Salisbury to Wango, to the bridge on the Pocomoke river, south of Powellsville, with a branch from that road through Powellsville to Truitt, to Willards.

Somerset—Beginning at the Wicomico county line, near Allen, to Princess Anne, to Kings Creep, to Westover, to Costen, to the Worcester county line, near Pocomoke. From Westover, by way of Harold, to Tulls Corner to Crisfield.

Anne Arundel—To begin at the county line near Owings, through Friendship, Mount Zion, Birdsville, Davidsonville, Rutland, Chesterfield, St. Stephen's Church, Millersville, Glen Burnie and Brooklyn. From Chesterfield to Annapolis. From Davidsonville to the county line near Hardesty.

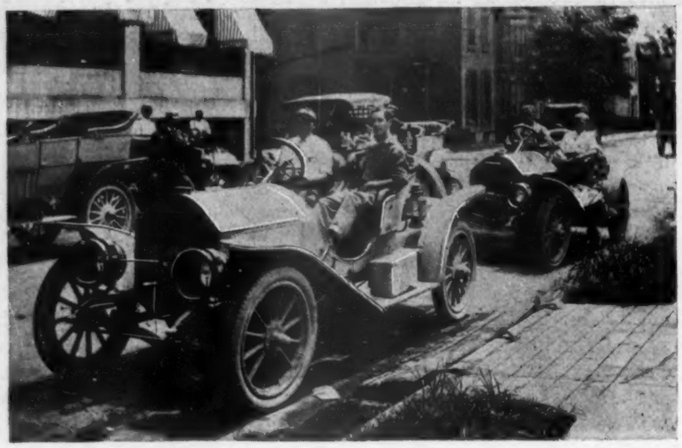
Charles—From Oaks to Burnt Store, to Bryantown, to Beantown, to the Prince George County line, north of Mattawoman. From a point south of Beantown, through La Plata, Port Tobacco, Faulkner, Newburg, Wayside and Tompkinsville to Rock Point.

Prince Georges—From the county line, near Mattawoman, northerly through T. B., to Clinton, to Camp Spring, to Silver Hill, to the District of Columbia line. From Camp Spring to Upper Marlboro; thence to the Anne Arundel county line, near Hardesty. Begin at the District of Columbia line, near Benning, and run easterly through Brightseat, Largo, Woodmoor, to Hall's Station, and thence to the road to Hardesty.

Worcester, Wicomico and Somerset counties are on the eastern shore of Maryland; Anne Arundel is on the western shore and Charles and Prince Georges counties are in southern Maryland.

ORPHANS AT MINNEAPOLIS TAKEN FOR OUTING

CONVENTION OF STODDARD-DAYTON AGENTS



OBSTACLE RACE, ONE OF THE NOVELTIES — THE STODDARD-DAYTON CONVENTION — ARRIVAL OF THE HOWER STODDARD-DAYTONS

DAYTON, O., Aug. 1.—The second annual convention of Stoddard-Dayton agents here on July 29, 30 and 31, was attended by about eighty dealers who came from the Atlantic to the Pacific and from Canada to Texas. Wednesday was devoted to the inspection of the 1909 models. These were on exhibition on the seventh floor of the new building and embraced twenty-three types of bodies on four chassis, together with a display of all parts of the various motors, transmissions, axles in various stages of manufacture from the rough steel to the finished product. A sectionized motor was used to show the complete lubricating system. This motor, which was electrically-driven, had a glass covering over the cam gears and one over the two rear cylinder openings on top of the crankcase, an electric light in the crankcase showing the absence of splash and the uniformity of the oil reaching the wrist pin and traveling thence to the cylinder walls. The constant lubrication of the gears also was illustrated. An inspection of the chassis showed the refinements over the '08 models. The cylinders are cast with a square waterjacket having a front and rear plate cover. The valve spring washer is also much deeper. The valve plunger guide is even with the cylinder surface, the oil gauge is inside the crankcase and the single timing gears are increased in face width 25 per cent. The clutch shaft bearings are pivoted and the square shaft in the transmission is increased 37 per cent. The transmission bearing caps are 50 per cent longer. The propeller shaft is made from nickel steel with the taper for drive made 100 per cent longer. The thrust bearing is on the hub of the pinion. The live-axles are made from chrome nickel steel and have the clutch forged integral. Increased braking efficiency is gained by making the drives 2⅛-inch larger. Strength is added to the frame by making it from metal 1/32 inch thicker and the section ½ inch deeper and ¼ inch wider on the flange. The control lever slot is now in a dust-proof case placed outside the frame. A plain eye has been placed in front of the strut rod, making both ends the same, with a special oil lubricator on the rear pin. The front strut rod bracket has been redesigned. An accellerator pedal has been added to the throttle system and the wheelbase is increased 6½ inches, making more foot room in the baby tonneau. These refinements, which are only a few of the many, are shown on three chassis, models K, C and H. The inspection of these models was concluded Wednesday evening by a Dutch supper at the Hofbrau.

STODDARD-DAYTON AGENTS TAKE PART IN "HILL-CLIMB"

Thursday was devoted to a thorough discussion of trade and selling conditions and the accessories equipment of the '09 cars. On Thursday evening, at a banquet in the Dayton club, C. G. Stoddard acted as toastmaster and the following toasts were proposed and responded to: "The Future of the Industry," by R. Y. Houk; "Observations of the Public," by J. M. Cox, and "As You See Them and As They Are," by F. A. Barker. On Friday morning repairs, advertising and miscellaneous matters were talked over. At a picnic held on Friday afternoon at Wise's camp, the Chicago Motor Club was flattered by having its contests imitated: Event No. 1 was a hill-climb; event No. 2, gymkhana, and event No. 3, an economy contest with an endurance sealed-bonnet and speed contest. These contests were entered into with enthusiasm by the entire force of agents, who were rewarded by prizes for was won by Sears of Des Moines.

Excitement was aroused Friday morning by the arrival of the two Hower trophy cars, Nos. 107 and 112. These cars, which were withdrawn from the contest at Pittsburg, were driven to Dayton in time to be inspected by the several agents, who made favorable comments on the condition of the much-driven cars after 2,200 miles of rough road work.

Franklin Men Meet

Syracuse, N. Y., Aug. 2—With a motor excursion to Glen Haven the third annual salesmen's conference of the H. H. Frank-

STODDARD-DAYTON AGENTS AT CONVENTION

1—Discher, Milwaukee; 2—Whitney, Boston; 3—Moore, Pittsburg; 4—Frank, Oklahoma City; 5—Newton, New York; 6—Sears, Des Moines; 7—Williams, Rochester; 8—Kinsey, Dayton; 9—Newmann, Detroit; 10—Smith, Toronto; 11—Whiting, New York; 12—Blaine, Cincinnati; 13—Bradley, Cleveland; 14—Caine, Dayton; 15—Miller, Akron; 16—Gilbert, Jacksonville; 17—Fisher, Indianapolis; 18—Church, Los Angeles; 19—Cox, Dayton; 20—Coats, Dayton; 21—Heyden, purchasing agent; 22—Campbell, treasurer; 23—Peopell, Springfield; 24—Edwards, Chicago; 25—Ferris, Boston; 26—Robberts, Columbus; 27—Ettwein, Columbus; 28—McGee, Kansas City; 29—Dodds, Dayton; 30—Zimbrick, Rochester; 31—Halligan, Grenwich; 32—Hartwell, Mobile; 33—Hull, Dayton; 34—Moore, Cleveland; 35—Jenkins, Columbus; 36—Edwards, chief engineer; 37—Atwood, Toledo; 38—Jameson, sales manager; 39—Tillotson, Chicago; 40—Barnett, Denver; 41—Kaufman, Williamsport, Pa.; 42—Cleland, Newark; 43—Stoddard, general manager; 44—Estell, Omaha; 45—Nock, Providence; 46—Houk, superintendent; 47—Barker, advertising manager; 48—Ray, Fort Worth; 49—Ramaley, St. Paul; 50—Wetzel, New York; 51—Longest, Louisville; 52—Tozier, Cleveland; 53—Cramer, Buffalo; 54—Moore, Buffalo; 55—Thompson, Lexington; 56—Rhodes, Thomasville, Ga.; 57—Tuttle, assistant superintendent; 58—Miller, Dayton.

lin Mfg. Co. was brought to a close. The run to Glen Haven was made in the same cars which covered the 1,700 miles of this year's Glidden tour, in order that the salesmen could observe the operations of the machines after having covered such a long distance under the most trying exactions. Though not so severe as some of the roads encountered on the Glidden tour, the roads covered were said to be a fair sample of the sort of traveling that was experienced on the 1,700-mile run. The party numbered twenty-five, and included H. H. Franklin, president of the company; G. H. Stilwell, John Wilkinson, the salesmen and the department heads. The company has added three new agents to its selling force this year. In speaking of the conference Mr. Franklin said that all of the salesmen predicted a great improvement in business conditions for 1909. This was particularly true in the west, where crops were abundant and where the buyers are showing a tendency to purchase a better grade of machine than heretofore. It was announced that this season the company would add taxicabs and commercial cars to its output. The territory assigned the various salesmen is: W. J. Reynolds, southwest, Texas and Oklahoma; J. F. McLain, Pacific coast; J. E. Doane, Syracuse; A. D. Caldwell, Michigan, Illinois, Indiana and Wisconsin; W. S. Jewell, manager New York branch, and A. B. Henley, manager Boston branch Franklin Automobile Co.; R. H. LaPorte, New England; L. E. Hoffman, the south; George Ostendorf, western New York, Pennsylvania and Ohio; F. H. Sanders, Minnesota and North and South Dakota; George E. Messer, Iowa, Nebraska, Kansas and Missouri. The salesmen made a visit to the works of the Crucible Steel Co. when a trip of inspection was made through the latter company's plant. The salesmen saw the forces at work and pronounced the visit not only entertaining but most instructive, giving as it did to them an opportunity to see the process through which certain of the materials passed which the Crucible company furnish the Franklin company. Many interesting matters were covered during the conference. A very complete history of of the Franklin company, who told of the concern's progress.

WEIDELY DRIVES HOME

Indianapolis, Ind., Aug. 3—After abandoning the run-off for the tie between the five cars finishing perfect at Saratoga Springs at the nd of the Glidden tour in competition for the Hower trophy, George A. Weidely drove his Premier car through from Pittsburg, making an excellent run to Indianapolis. Leaving Pittsburg at 2 o'clock one afternoon and stopping at Zanesville over night, he arrived at Indianapolis at 4 o'clock the afternoon of the following day. On the first half of the trip, considerable difficulty was experienced as the occupants of the car were given wrong directions, and after leaving Cambridge, O., on what was upposed to be the right road, the Premier men found themselves again in that town something over 2 hours later. However, they made another start and reached Zanesville in good time. The latter half of the trip from Columbus to Indianapolis, a distance of 200 miles, was made in 7 hours.

STODDARD-DAYTON AGENTS' "ECONOMY CONTEST"

MOTOR CARS FOR PASSENGER USE IN CITIES

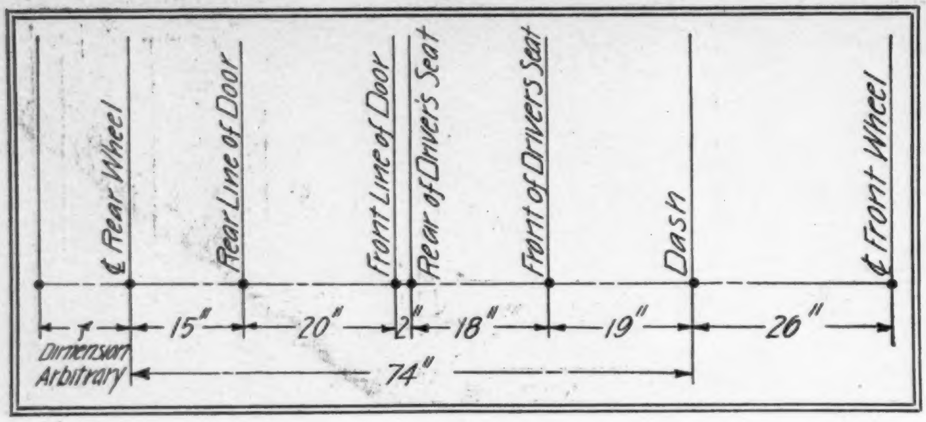


FIG. 1

THERE is a very close line of demarkation, as yet barely recognized, between the vehicle popularly known as the taxicab and the town car. At the same time full appreciation is given the fact that certain manufacturers advertise their goods simultaneously as taxicabs and town cars, and undoubtedly they themselves are versed in the existence of the difference between types which they would familiarize as synonymous. It is equally certain, though, that there are very many individual concerns in the industry, to say nothing of laymen, who have no real conception of the differences demanded by circumstances and by service from vehicles that ply for hire within a city and its environs and a private carriage for use in the same neighborhood. Probably a tabulation of the differentiated requirements will be the best means of bringing the conditions forcibly to the mind of the reader. Scanning such a tabulation we find:

TAXICAB

1—It must be eminently serviceable and in lieu of absolute reliability must be easy of immediate repair.
2—It must comply with police regulations regarding turning radius.
3—Of reasonable comfort and capacity; appearances are secondary to certain other considerations.
4—Its internal operations must be entirely automatic to avoid trouble with unskilled treatment.

TOWN CAR

1—While reliability is essential, means for rapid handling of repair is hardly as important.
2—There are no police regulations on its construction or performance.
3—Maximum comfort for rated capacity is absolutely essential.
4—Appearances are everything.
5—Its cost is comparatively immaterial.
6—Better treatment can be counted on.

Thus the designer is confronted with two entirely different problems—the one calling for serviceability above all things and the other for extreme luxury under all conditions. It is, of course, rash to aver that the two cannot go hand-in-hand, but it is not injudicious to state definitely that the requirements of a town car de luxe cannot be satisfied by the dimensions which have been relegated to the taxicab.

Examine the limiting factors in both cases. The regulations of the administration call for the vehicle plying for hire turning within a fixed radius of such small dimensions that wheelbase is especially restricted. Wheelbase being restricted, each and every one of the items of the make-up must be proportionately restricted unless internal sacrifices of space are made. Hence, wheelbase is the determining point of a taxicab design, nor does any specified form of steering help to release its control of the situation inasmuch that the miximum angles of steering wheels are defined by inflexible dynamic considerations.

Town Car Considerations

Follow now the case of the town car. What is the first desiradum? Undoubtedly capacious comfort, or comfort and capacity equal to that of the vehicle in the place of which it substitutes itself—the private brougham. No governmental restrictions are incidental to the use of a town car, hence there are no wheelbase dimension which cannot be exceeded at the discretion of the designer. Above all, the town car is a carriage, and as a carriage it is the luxurious perquisite of a class of people having educated discrimination between the seemly and the unseemly in the art of outline—the limitation of service and the taste of their possession.

These things it is eminently essential that the would-be producer of town carriages should remember, for, bearing them in mind, he must necessarily commence the laying of his design upon foundations which will appeal to his mechanically-educated senses as more than premature. In other words, he must start with the carriage and duly build his propulsive mechanism about it—a truly revolutionary suggestion to the motor car designer, though less startling at the present time than some 2 or 3 years ago.

Head room and leg room, door space and floor height, seat location and cushion bulge—all these things have been developed by many generations of carriage builders, and if so why seek further for information? Ask any of the first class carriage builders, whose names are household words in the class, whose trade you are after, what they consider the ideal design for a brougham—a coupe—a victoria, or whatever you desire to build. Let them define what they, with years of experience of a trade into which you are about to break, would consider the perfect vehicle—a *chef d'ouvre*—and from the results of decades of cut and tried methods that will be so unobtrusively correct in those details of dimension so difficult to develop or steal that there is no need to seek further or waste another decade in research work after that what is already known.

Chassis to Suit Body

Mark well in this, that the way to secure such data is not to supply a chassis and demand a perfect body built to it. Such a procedure will only call forth much unnecessary exercise of ingenuity upon the part of the carriage designer who will do his best and at that produce work unsatisfactory to himself. Secure as a starting point the ideal lines by a master of the approach to perfection in the passenger section of the vehicle; forget the driver, the driver's companion, luggage accommodation, accessory attachments—be oblivious of all these disturbing elements and then, having secured the nucleus—the pearl of desire—commence to construct about it, by synthesis as it were, the oyster necessary to its being in the shape of a suitable chassis.

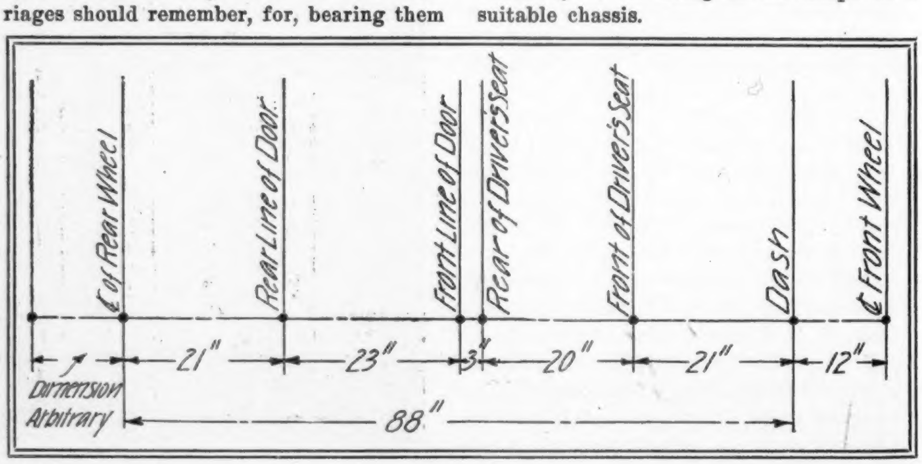


FIG. 2

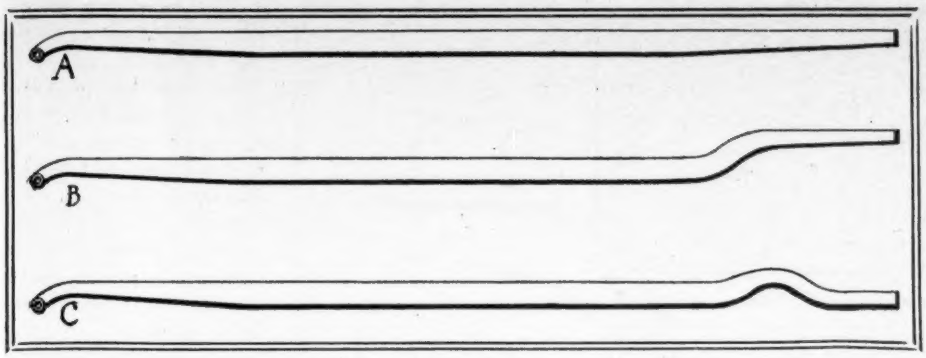


Fig. 3

The critic may aver: "This is only an assertion; how can I be expected to work a chassis around a carriage builder's job. Why, if they had their way," etc. Too frequently the carriage builder, left to his own devices to avoid some crook of design, for which he is not responsible, perpetrates abominations; but left to his trade the carriage designer has a respect for purity of line, complementary angles and supplementary curves, mingled with an honor for re'entrant tendencies that invariably eventuates in a simple beauty rarely noticed where his work is curbed by lines created and abhorrences forced upon him by unbending circumstances.

And having secured the ideal for the part that matters—the carriage—it is really quite easy to do the rest.. "Quite easy," is said advisedly, for it must be so relatively speaking, when one considers the extraordinary amount of ingenuity misplaced in getting around things to use some idea or other which is really not worth while anyway and certainly not vitally important as is the carriage arrangement of a vehicle, the alpha and omega of whose purpose is that of a town carriage, whose very acquirement indicates a desire for luxury.

Town Car Differs from Taxicab

Possibly the difference in the manufacture of the town car and the taxicab may be described by indicating the difference in the buyers of each. It is mind and matter respectively. Ten-to-one the town car customer is appealed to by the style, the taste, the color, some fitting—by detail only; in other words by a chimera. Is it not a matter of record in 90 percent of the cases the women swing the sales? Not so with the taxicab buyer. In vulgar parlance, "he's from Missouri," and when he takes his demonstration he's not very anxious as to the taste of the make-up. What he wants to find is value, not toilet glasses. It's dollars present and dollars prospective with him, and he doesn't give the proverbial tinker's curse for the art of the thing. What he wants is results. So does the buyer of the carriage; but he likes a lot of art on the side as well.

Elements which are essential to a good town car are almost undesirable in a taxicab. Thus, comfort for capacity is a *sine qua non* with the town car, but tends to overloading with a taxicab. And, although a taxicab should be sufficiently roomy, the fact that it is included in the class of vehicles that ply for hire, renders it equally liable to the shopping tour of "miladi" at noon and the rowdy pack at midnight, the last mentioned fare being apt to be weighty and undesirable from more points of view than just its own discomfort.

Hence, the existence of the line of demarkation, already spoken of, will be generally acknowledged by those who will consider the matter, and therefore it is meet to proceed to dissect differences to the point of diversity of practice, for with vehicles differing so widely the mechanical practice must of necessity vary to a certain degree. In the first place, the town car must obviously be the more powerful, for, with greater wheelbase and more commodious body work, its weight calls for a higher engine capacity. Also, since there is a possibility that the chassis work may have to adapt itself to the body work, rather than vice versa, some specialized constructional scheme may be necessary, not involved in the taxicab layout.

Clearance of Taxicabs

Next comes the all-important mention of road clearance, a question the solution of which is attended by no mean difficulty, inasmuch that of nature desirably low—close lying to the road surface, the vehicle for town use has yet to contend with conditions from time to time which demand that it shall be possessed of ample clearance. This difficulty presents itself and, insidiously tardy in the forcefulness of its realization, is a real nightmare to the designer, who finds himself faced at every turn by troubles directly traceable to the necessity for this clearance. Thus a straight line drive is not only desirable but well-nigh essential for a chassis to operate efficiently and continuously without either undue power, loss or extraordinary wear. Also, it is injudicious for obvious consideration to raise the frame of a city vehicle further than 25 inches from the road surface, this dimension being arbitrary irrespective of wheel diameter.

Considering 34-inch wheels as the maximum size likely to find favor in the eyes of the designer and producer and a straight line drive parallel with the line of the frame, it will be obvious that the clearance with a normal flywheel is somewhat low. What alternatives present themselves? The engine may be raised at the expense of angularity being introduced in the propeller shaft; an inclination may be given to the engine to correspond with an inclination of the driving axis sufficient to provide the clearance beneath the flywheel. Lastly, speculation of the transmission system may be adopted.

The Main Chassis Types

Figure 7 shows an arrangement entirely conventional, very common and as reprehensible as frequent. So much has been written upon the loss of power in transmission through universal joints that the writer feels it unnecessary to emphasize the undesirability of such an arrangement. Figure 6, depicting the inclination of the whole driving axis, is excellent in many ways, has many ramifications which we will look into later, and, provided certain conditions are not complied with, remains as by far the most generally satisfactory way out of the trouble. The last solution is, to the writer's mind, the best of any, but of this more later, as there are coincident reasons which will appear later in this monograph. Regarding ramifications of the inclination system of providing a sufficiency of clearance there are two which are deserving of close atten-

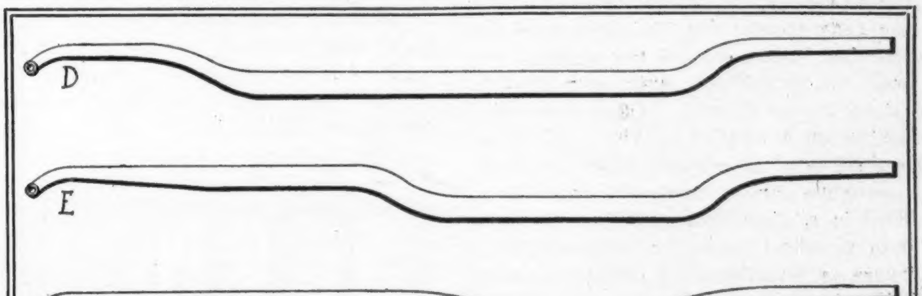


Fig. 4

tion, namely, that used respectively by the Rover company in England and the Nordyke & Marmon company in this country.

Fig. 7 will make this modification clear and its commendable points are not few. Fig. 7 illustrates the direct adaptation of the inclined drive to a construction such as shown in Fig. 6. This latter is probably the better for all round work and for manufacturing purposes. In either case the clearance beneath the flywheel is easily modified to suit any limiting conditions existing, so the real issue is to investigate the influence of the inclination to the functions of the motor. The only difficulty lies in the problem of the lubrication and in the selection of a lubrication plan which is independent of the inclination of the crankchamber. With a single-cylinder motor almost any system would be satisfactory; with a multi-cylinder engine it will be evident that the auxiliary splash system—so often the only system—is almost out of the question, inasmuch that the rear cylinder would normally be in a state of oil flood while the forward ones starved.

It may be argued that individual compartments to the crankchamber would supply the want. With an overflow system in conjunction with a pump feed it might do, but from the point of view of economics results against installation expense. A complete force feed system is preferable, making the motor entirely independent of position under any conditions.

The Century Wheelbase

Basing the layout of a cab chassis upon a permissible wheelbase of 100 inches, it is easy to determine the proportioning of the space from rear frame bar to dashboard, which can be approximately ascertained by a glimpse at Fig. 1. According to the hypothetical dimensions shown the body builder has 74 inches from the rear face of the dash to the center of the rear wheel, and whatever over this he thinks he can do with. These dimensions are modified somewhat in Fig. 2, which is a series of dimensions which would accommodate an uncramped coupe body. Here is a dimension of 88 inches from dash to wheel center or a matter of 14 inches in wheelbase, all other conditions being the same.

In the case of the cab chassis the dimensions shown are not capable of any wide range of variation, or is such a machine a dream of comfort from the driver's point of view? On the other hand, economy of driver's space is absolutely necessary to give any kind of door room.

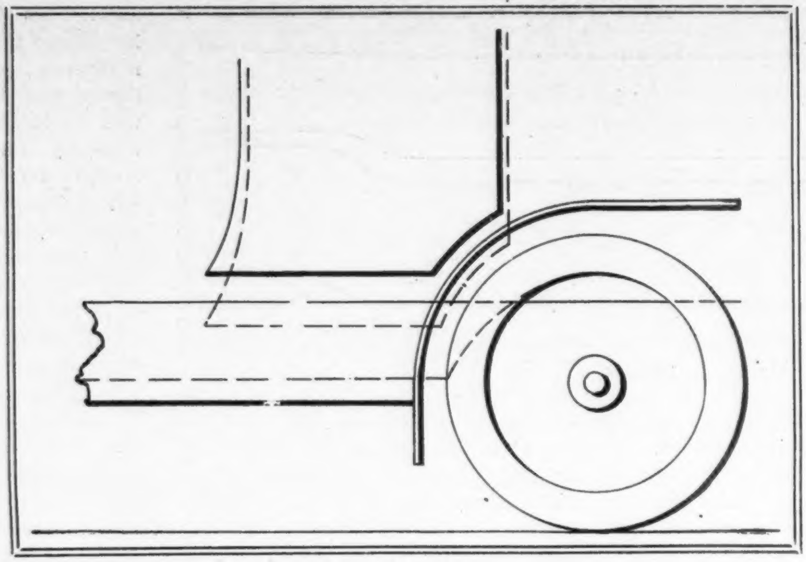


FIG. 5

Now in the dimensions shown a Morris chair effect is given to the driver's portion of a body built to the hypothetical dimensions in Fig. 2. A low slope to the footboard is indispensable and the seat must be at least 16½ inches high to the top of the cushion from the floor line, this latter, of course, being determined from chassis design; but there is ample room for a good door, sufficient space to prevent the use of a concave corner to the door for fender clearance being necessary and sufficient room between door and rear wheel center necessary to ensure a minimum overhang of body with reasonable regard to economy of wheelbase. The ideal would be to have the frame rear bar about 2 to 3 inches inside the rear wheel center, but then the wheelbase immediately ascends to a figure that is impossibly high for the purpose in view.

Now go further and examine the diverse problems in the process of the selection of a frame design. Figs. 3 and 4 reveal known types of these: A is the ordinary straight frame—excellent and by no means impossible of utilization. B is the single raise, or, as is commonly known, the single drop frame, the rear end being raised to give clearance to the rear axle. C is known as a "kicked" frame and is simply a straight frame with clearance provision. D is the crude form of what is known as the "double drop frame," depressed to lower the center of gravity of the assembled machine and raised again for clearance purposes. E is a similar form but depressed only for the body space. F is a very highly developed form used by a few European firms and by one well-known American company. G is a type unknown but probably nascent, since it would be much easier of manufacture than either of the forms E or D.

Secure Low Body Carriage

Now it will be obvious to the reader that it is a quite desirable thing to secure as low a body suspension in conjunction with reasonable clearance, and consequently frames such as indicated in the series D, E, F and G are desirable from this point of view. On the other hand, they are more expensive to press, less strong and, lastly, more expensive to assemble. But these matters are more than compensated for by the scope provided for the designer to accomplish beautiful carriage lines—low suspension and to abolish running boards. This for the town car. With the restricted wheelbase of the taxicab the only possible frames of this pattern are those shown at E and D. The depression of the center of gravity preserves the appearance of the machine when complete except that a running board would be dispensed with. It strikes the writer that the straight frame, stronger and cheaper as it is, has claims not to be superseded. By straight frame in this connection is meant either of the frames shown at C, B or A, with due regard to the pattern of spring suspension which may be employed.

It will be readily appreciated that the double drop frame is not easily to be employed for taxicab chassis when the relation of the door to the wheel fender is considered. Thus in Fig. 5, a straight frame being used, the door may be located as shown by the full lines, whereas a drop in the frame lead, the wheel and fender remaining as before, the designer immediately encounters an interference of some magnitude which can be avoided only by an increase of wheelbase if other dimensions are fixed. The conclusion that the straight frame is the only possible type

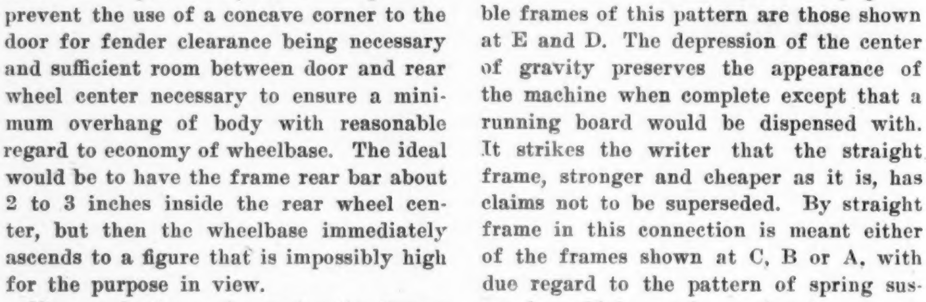


FIG. 6

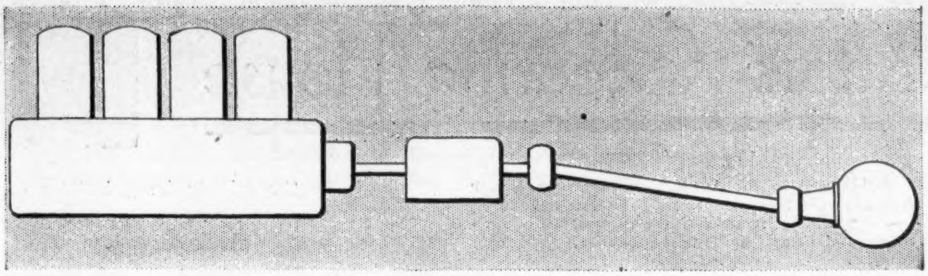


FIG. 7

for cab construction has been borne in forcibly upon the writer only after a very close investigation of conditions, possible variations in existing systems and costs involved in a successful design and conclusion equally strong in favor of the cradle frame for town cars has been reached.

Three Transmission Types

Pass to the transmission system. There are three fundamental arrangements possible—planetary transmission or sliding gears for the speed change, and the location of either in a separate unit or about the rear axle.

It is eminently desirable that a vehicle for town use shall have four speeds, for not only is its power limited by reason, but the call for rapid acceleration is more frequent than with a vehicle primarily designed for open road work. Highly developed accelerative properties in a motor car speak of two things—extraordinary engine power or nice proportioning of gear ratios. The old and foolish idea that a machine having two speeds only can reach its maximum speed as quickly as another of similar power with a plurality of speed changes has died a quiet death, even as the two-speed fetish has subsided. The three-speeded car, even with six cylinders, is to be replaced by again having four changes in many cases. These things spell retrograde evolution to the theorist but satisfaction to the operator, and inasmuch that in the case of a vehicle for use within city precincts the operator is a well-worked man it is undoubtedly the business of the designer to ensure that his work is at a minimum in strenuous quality if not in frequence.

This leads back to the old standby, slid-gears, and it is necessary to decide first ing gears, and it is necessary to decide first able to adopt for the relation of the speed change to the drive. Figs. 8, 9 and 10 show some constructions possible with a conventional engine location. In figure 8 is seen the usual common or garden construction, the only variant of which lies in the use of a single universal joint in place of two. In Fig. 9 there is another conventional scheme in which the transmission is grouped about the rear axle center, and in Fig. 12 is a somewhat unconventional assembly in which transmission and axle are in unit form, but in which the transmission is grouped about the forward end of the propeller shaft. The problem then is to distinguish between the merits of the following alternative systems.

1—Arrangement such as shown in Fig. 8:
A—Gearbox being entirely separate from engine.
B—Engine and gearbox as a unit.
C—Axle and propeller shaft with its housing as a unit.
D—Propeller shaft as a unit in itself with supplementary radius and torque rods.
E—Engine, gearbox, propeller shaft, housing, and axle as a unit.
2—Arrangement such as shown in Fig. 9 subdivided as follows:
A—Axle and transmission as single unit propeller shaft supplementary with radius and torque rods.
B—Axle, transmission, propeller shaft and housing are unit.
C—Engine transmission, propeller shaft and housing as one unit.
3—Arrangement such as Fig. 10 with:
A—Transmission, propeller shaft, housing and axle as a unit.
B—Engine, transmission, propeller shaft, housing and axle as a unit.

Now if this tabulation be inspected it will be seen that the highest development in each individual system leads to the same conclusion, which conclusion coincides with that reached in course of discussion on clearance, wherein the inclined system either with its components assembled as a unit or in flexible mounting was outlined as the most likely type.

Having got so far the matter becomes one of individual taste on the part of the designer, who can best judge the type likely to meet the condition of his plant most economically. A divided unit system is undoubtedly desirable for cab work, since it permits the complete withdrawal of the power of transmission sections respectively and the substitution of a perfect counterpart without holding up entirely the earning capacity of the vehicle. For town car work this is by no means as nearly essential, although quite an excellent feature as regards the transmission section.

An Ideal Taxicab Layout

In Fig. 13 is a diagrammatic layout of a town car or taxicab power installation. As far as the layout is concerned there is nothing remarkable except that ample clearance and other qualities, to be mentioned shortly, are introduced by the use of worm drive. Notice the following points:

A—The clearance is ample even though a large flywheel is used.
B—The engine inclination is necessary to secure this clearance.
C—A straight line drive is ensured.
D—The worm being centrally located in the axle permits of a variation of gear ratio to be made by changing the worm and wheel combination in a fashion impossible with bevel drive type.
E—Absolute symmetry is obtained.

These points are obvious on inspection; there are others not so obvious which the writer gives after a very extensive experience with worm drives. Firstly, absolute silence is certain on the direct speed. Secondly, incredible as it may appear, the use of a worm drive with a sliding gear ensures almost absolute silence on the lower speeds, no matter how crudely the gears may be cut. This property of the combination is startling but established, and bears, in the writer's mind, extraordinary importance.

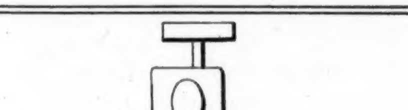


FIG. 8

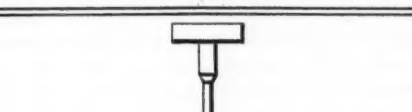


FIG. 9

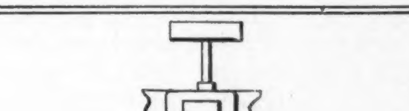


FIG. 10.

The Readers' Clearing House

GAS COLLECTS IN TIRE

DeRidder, La.—Editor Motor Age—I am a constant reader of Motor Age and notice the trouble motorists have with tires blowing out. I have had some trouble along this line until I found a remedy. A tire standing pumped on the same wind too long will become full of gas, and then the gas will explode from spontaneous combustion. At night you will observe a flame of fire from the tire. A tire getting too warm from sunshine or any other cause will collect gas, and pressure will be considerably more than when cool. Every few days I turn the air valve to the top of the wheel and drain all the old air and gas out, and pump full of fresh air. Since adopting this plan, I have never had a blow-out. For racing puposes, I suggest that a small pop safety valve on the tire would remedy this trouble to a great extent, as running so fast will naturally heat the tire. I would like to hear someone else's ideas on this question.—T. H. Sessions.

MANUFACTURE FLANGED WHEELS

Demopolis, Ala.—Editor Motor Age—Will Motor Age tell us who manufactures 22-inch railroad stamped flanged wheels for a 60-horsepower motor car of about 4,000 pounds weight?—Sledge Motor Car Co.

Flanged wheels for use on motor cars when driven on railroads are manufactured by the Goodman Co., Bucyrus, O. This company manufactures flanges for wheels 28, 30, 32, 34 and 36 inches in diameter, which flanges are attached without removing the pneumatic tire; rather the flange is designed to rest on the pneumatic tire so that its resilience is made use of. Correspondence with the Goodman Co. will determine whether it will manufacture specially for you the size of flanges desired.

CHICAGO-MILWAUKEE ROUTE

Michigan City, Ind.—Editor Motor Age—Will Motor Age inform its readers if the road from Hammond to South Chicago, thence to Chicago, is stone or dirt? Which is the best route from Chicago to Milwaukee, via Kenosha?—M. Kromshinsky.

The road from Hammond to South Chicago is stone or macadam two-thirds of the distance, this stretch being from the Wolf Lake clubhouse to Hammond. The stretch from South Chicago to the Wolf Lake clubhouse is dirt, and most of the running on this section is on the street car tracks. The road from Chicago to South Chicago is macadam through the park systems and a combination of gravel on Bond avenue. The last portion of the run is on mud and dirt roads. It is possible, however, to make the entire run on macadam and asphalt by taking Jeffrey

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems and invites a discussion of pertinent subjects. Correspondence is solicited from subscribers and others.

avenue out of the south end of Jackson park. Follow Jeffrey avenue to Eighty-third street, turn right from Eighty-third to Baltimore avenue, thence right along Baltimore to Ninety-second street, and left along Ninety-second on the street car tracks to the bridge.

The route from Chicago to Milwaukee by way of Kenosha is 102 miles and is not by any means so good a route as that by way of the Green Bay road, which measures but 89 miles. Going by way of the Green Bay road, the course is north through Evanston and Wilmette, to Fort Sheridan; at this point, turn left and cross over to the Green Bay road. Turn right and continue for many miles to the end of the road. Here, turn right along the side of the railroad for 200 yards, cross the railroad and then continue to the right, which road cannot be mistaken. The route is an easy one to follow and the roads good throughout. The road by way of Kenosha is north through Evanston, Wilmette, Glencoe, Highland Park, Fort Sheridan, Lake Forest, North Chicago, Lake Bluff, Waukegan, Zion City to Kenosha, and then by way of Racine to South Milwaukee and Milwaukee.

GRAPHITE FOR NOISY GEARS

Argentine, Kan.—Editor Motor Age—I have a large size planetary transmission which is very noisy, but otherwise works nicely. Will Motor Age tell me if it would be correct to use dry graphite with oil in the transmission, the idea being to deaden the sound and to better retain the oil in the transmission? What would be the right proportion, and what kind of graphite should I use?—C. A. Goodrich.

Noisy gears of the nature you suggest may be silenced to a considerable extent by the use of graphited wood fiber preparations which can be used for enclosed gears except where there are small air holes leading to the bearings. A compound of this nature has included in it a small percentage of graphited wood fiber together with flaked graphite, these two being mixed in petrolatum grease. The fiber used is taken from kiln-dried straight-grained cedar fiber, its use in the composition being to form a cushion for the gears to mesh with. The graphite is used

to eliminate the minute irregularities existing in the metal surfaces of the gears by filling in the low spots and forming a thin veneer-like coating over the gear. For heavy spur-gears a mixture of grease and sawdust has been adopted. Jewelers' sawdust because of its fineness and uniform consistency, is best suited for the work. The proportions of this sawdust with grease would depend on the amount of wear of the gears and the nature of the grease. One or two firms manufacture special graphites suited for such conditions.

SOLID OR PNEUMATIC TIRES

Webster, S. D.—Editor Motor Age—What are the principal objections to using solid tires, and can Motor Age recommend the use of any kind and what make would it be? Are they not cheaper and more satisfactory for one not desiring to speed over 20 miles per hour? Are they better for large or small cars?—E. O. Potter.

The objections to the use of solid tires on pleasure cars is the excessive vibration caused by them when the car is running at high speed. With a car never traveling at more than 20 miles per hour solid tires could be used to advantage, providing a slight change were made in the springs, experiments having proven that solid tires can be used provided the springs are altered slightly. Skidding with solid tires is much more dangerous than with pneumatics. Regarding the expense, solid tires cost about the same as pneumatics. A 28 by 3-inch solid lists at $34 with discounts and a clincher casing of the same size at from $23 to $25. A solid tire 36 by 4 inches lists at $67.70 with discounts and a 36 by 4½-inch pneumatic casing at from $59 to $63. The economy in the solid tire would result in the extra wear and freedom from punctures. From these prices are the regular cash discounts which differ according to the different firms.

INCLINING WIND SHIELD

Laramie, Wyo.—Editor Motor Age—Will Motor Age or some of its readers who have had experience with the following articles, tell what service they gave: Standard tire protectors, Woodworth treads, especially as compared with the Standard tire protectors; and the K-W magneto for any as well as Ford four-cylinder motor cars. Has any one tried placing wind shields at a small angle to the horizontal plane and was there less wind resistance noticeable as a result?—Reader.

Motor Age will foward to Reader's address communications that subscribers do not wish to be made public and do not desire published in these columns. Any sub-

scriber replying, and not specially requesting non-publication, will have his reply published on these pages. Motor Age has not any information on the comparative value of tire treads or the K-W magneto. Placing any windshield at an angle to the vertical reduces the wind resistance, providing there is a free escape for the wind striking the shield. Should this wind be pocketed there is little gained by a slight incline of the windshield.

INNER WHEELS LEAVE GROUND

Chicago—Editor Motor Age—As a subscriber to Motor Age I wish it would answer the following in the columns of its Readers' Clearing House. When a motor car is rounding a corner on a level road at sufficient speed to raise two wheels off the ground, which two wheels, those traveling in the smaller curve or those in the larger curve, will leave the ground? State the reasons.—A. J. Baldamp.

The two wheels traveling in the smaller curve leave the ground. According to the laws of motion, a body traveling in a straight line will continue to travel in that straight line until acted upon by a lateral force. The motor car before turning a corner is traveling in a straight line and at the turn must change its direction through an angle of 90 degrees. The lateral or side force causing this change is the angle of deviation of the front or steering wheels. When the steering wheels are turned to make the corner, the entire weight of the car tends to continue pushing it in a straight line in which it was traveling before the corner was reached. If the car, therefore, is traveling sufficiently fast so that its speed multiplied by its weight, or in short its momentum, exceeds the force required to upset the car when standing still, then the car will be overturned at the corner and in this upset the car will tend to be thrown in the direction in which the car was traveling before the corner, which means that the inner wheels or those traveling in the smaller curve leave the ground first.

DEFINITION OF AMATEUR

Roswell, N. Mex.—Editor Motor Age—Will Motor Age through the Readers' Clearing House tell what constitutes an amateur driver according to A. A. A. rules? In an emergency can kerosene be used in place of gasoline, and if so what adjustment of the carbureter is necessary? In a double chain drive, differential in the transmission case, if one chain breaks can the car be driven by the remaining chain by locking the jackshaft sprocket which is without chain, and if so will the speed of the car be changed relative to the speed of the engine?—C. W. Maxwell.

According to the racing rules of the American Automobile Association, the following is the definition of an amateur: "An amateur is a man who has never driven or raced a motor car for pay, either in cash or any other valuable consideration; competed for a cash prize; who does not make his livelihood or any part of it as a result of racing or driving, either as a demonstrator, tester or chauffeur; who has not otherwise received financial award for engaging in a competition; who has never been declared a professional by any sport governing body, in connection with that sport over which it has jurisdiction, or who, having been so declared, has been reinstated either by such a body or by the racing and technical boards of the American Automobile Association."

In cases of emergency kerosene can be easily used instead of gasoline, providing the motor is running and well warmed up when the kerosene is switched on. Owing to the lower specific gravity of kerosene it is harder to vaporize, which makes starting the motor on it particularly difficult. In one or two cases reducing the diameter of the intake manifold has resulted in facilitating the use of kerosene, the theory of this course being that with a reduced intake diameter the motor pull on the carbureter is increased in speed and a stronger pull is exerted on the kerosene in the nozzle of the carbureter. In a side chain-driven car, should one chain break, locking the sprocket on that side will permit of the car being driven home on the other chain. This is exceedingly bad policy in that the drive is entirely through the differential gears, which means a great loss of power and works a particular hardship on the differential. Should the bevel pinions on the inner ends of the halves of the jackshafts be the same size as the balance bevels, then the speed of the wheel will have the same ratio to that of the engine as when the differential is in proper order and driving to both rear wheels.

ON MODERN STYLES

Bournedale, Mass.—Editor Motor Age—I wrote you a letter a few days ago asking if Motor Age knew of any book that has been published recently and was advertised in its columns, telling how to tell all the different motor cars from each other, which sold for 50 cents. Is there any machine made, either buggyabout or a standard model, using a two-cycle motor, friction drive and air cooled?—George Briggs.

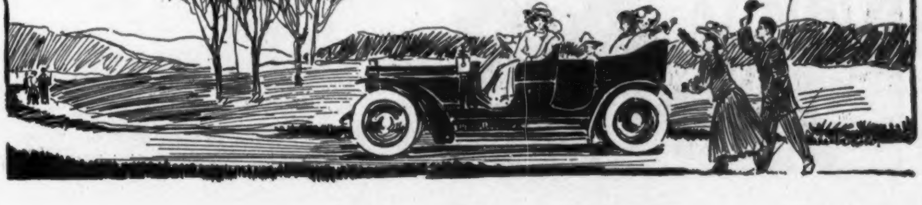
So far as Motor Age knows, no book of this kind has been published, at any price. The nearest thing to it would be the annual handbooks of the manufacturers' associations, the Association of Licensed Automobile Manufacturers and the American Motor Car Manufacturers' Association, both of which publish books illustrating and detailing the specifications of the current models of their makers. The address of the former is 7 East Forty-second street, and the latter, 29 West Forty-second street. Motor Age understands that both associations supply these books to prospective purchasers on request and free of any charge. Of course, there are a number of makers who are not members of either association.

The car that comes closest to your specifications, and the only one of the kind that Motor Age can call to mind at the moment, is the Duryea buggyaut. This has a two-cylinder, two-cycle, air-cooled motor and a type of friction drive that is novel. There may be other cars that fall more or less closely within your requirements as set forth, but we do not recall them, and probably some of our readers will come to our assistance, as it is getting pretty difficult to keep them all in mind, particularly as so many come on the scene only to disappear within a comparatively short time.

TESTING SPARK COILS

Leominster, Mass.—Editor Motor Age—Will Motor Age inform me through the Readers' Clearing House department how to test out the spark coils? I have never seen this stated and would like to have some light shed on the subject.—C. F. Nixon.

There are several ways in which the spark coils of any motor car can be "tested out," so we are somewhat at a loss to know exactly what you wish. The test most commonly required by the average motorist, however, is that for the consumption of battery current, and on this subject Motor Age has published fully a score of letters during the past year, with more or less lengthy answers thereto. Take a low-reading ammeter, that is, one that is calibrated up to 3 amperes by tenths of an ampere, and insert this in series with the coil to be tested. That is, connect one terminal of the instrument to the battery and the other to the primary terminal of the coil, so that all the current which passes through the coil to cause the spark must go through the instrument, commonly called a coil-current tester, or meter. This must be done with the motor running under its own power, as a test made under any other conditions would be valueless for practical purposes. The needle of the meter will move every time the current passes and then drop back again to zero, but as good instruments of this kind are of what is known as the dead beat type, in that the movement of the needle is resisted by a counteracting force, and does not fluctuate constantly about the point at

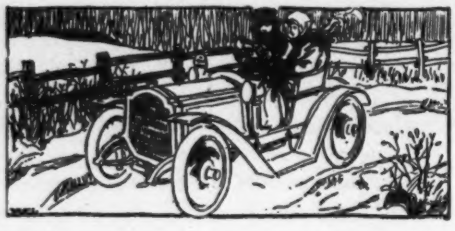


which it should come to rest, it will not be found difficult to gauge the current consumption in spite of its constant jumping, due to the current being entirely cut off each time the motor fires. Screw the trembler adjustment of the coil up or down according to the reading given by the instrument, until the coil is consuming the minimum amount of current that the motor will run on without missing. This should not exceed 0.50 to 0.75 ampere. The manner in which battery current may be wasted unconsciously may be shown by screwing one of the trembler blades down hard, which will cause the needle to register 2 to 3 amperes. Repeat the operation in the case of each coil.

PHASES OF LUBRICATION

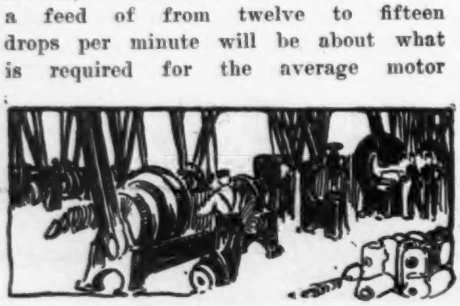
Far Rockaway, N. H.—Editor Motor Age—I have an engine with the crankcase divided into three compartments or crankpits. Will Motor Age tell me how I can, using splash lubrication, keep the oil at a constant level, supply being from a tank, without using a pump or other similar device? I have been told that I can use some such arrangement as is used in the student's safety lamp, but I have been unable to find out what this is. I will be very grateful for any help you can give me. I see that the oiling systems on the Franklin and Studebaker cars went out of commission, and that they finished with a perfect score by using only the splash. If this is sufficient, why use the oilers at all?—M. E. M.

Probably the best way to accomplish this would be to take three independent leads from the gravity tank, one to each of the three compartments of the crankcase, placing a gravity sight feed on each one of them in a place where it would be readily accessible for regulation. By experiment, ascertain the proper level to maintain the oil supply in each of the crankcase compartments. This can be done by putting in what is known to be an excessive supply, and gradually reducing it to a point where the motor shows no signs of smoke at the exhaust, but where the bearings are still getting an ample supply of oil; some motors, owing to poor design, cannot be properly lubricated short of smoking. Having ascertained just what the proper level should be, the next thing to find out is how much oil should be fed per minute to maintain this level while the motor is running. A good sight feed can be regulated to pass anything from two or three drops per minute up to a steady stream, but doubtless it will be found that a feed of from twelve to fifteen drops per minute will be about what is required for the average motor



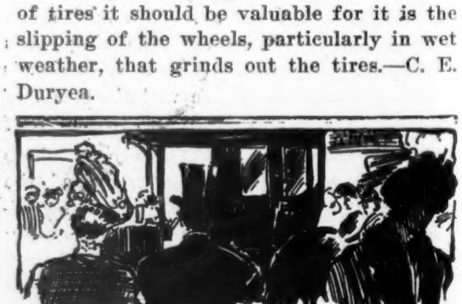
that does not show any tendency to run dry. The best material to make such a tank of is copper, and the best location for it is right alongside the motor, at about the level of the cylinder heads. In this position the oil will be subjected to a practically constant temperature summer and winter, while the motor is running, and there will be the minimum necessity for altering the adjustment of the feeds. By placing the tank as above indicated and adhering constantly to the same grade of oil, there should be little occasion for making any change in the adjustment of the feeds. Otherwise the greater or less viscosity of different grades of oil and its varying density with the temperature would tend to alter the rate of feed every time conditions changed. An equally simple, and far more positive, method of lubrication consists of maintaining the level in the crankcase by means of a reservoir and a pump. The capacity of the latter is such that it just supplies sufficient oil to insure the proper quantity, the oil running from the tank into the crankcase by gravity, being lifted again to the tank or reservoir by the pump. By this method the same oil is constantly circluated, sight feeds being put in the pipes to show that it is running. Such a system starts and stops with the motor, and comes as near to fulfiling the requirements of being automatic and self-contained as any that we know of. There are no adjustments to watch, and it is only necessary to clean out the crankcase and renew the supply every 300 to 500 miles, according to the efficiency of the motor in this respect. This is something that should be done on every car, regardless of the type of lubricator employed, as the oil remaining in the crankcase after that distance is practically valueless.

The fact that the cars you mention managed to complete the day's run with their oilers out of commission is not proof conclusive that they could be run indefinitely without the force-feed oilers with which they are equipped. Practically every car, regardless of the elaborateness of its oiling equipment, depends in greater or less measure on splash lubrication. The object of the oilers is to maintain the level of the oil in the crankcase and to insure the delivery of a supply of oil at points not ordinarily reached by the splash, or not covered as positively as the force-feed oiler can do it. The latter takes the place of the gravity feed arrangement described above, and force-feed types of oilers have supplanted gravity principally on account of their certainty and reliability. But there must be a certain amount of oil present in the crankcase before there is any splash, and in some cars this is quite a quantity, on which they are able to run for some time without renewing the supply. The two cars mentioned did not have their oilers entirely out of commission. The Franklin broke one oil lead to a cylinder and had to frequently inject oil into the crankcase compartment beneath this cylinder which is conclusive proof of the necessity of the oiler.



SUBSTITUTE FOR DIFFERENTIAL

Reading, Pa.—Editor Motor Age—Sometime ago in an article by Mr. V. Lougheed, some defects of the differential were mentioned. It was particularly stated that skidding is often caused by slipping of one driving wheel with spinning of the differential while the other wheel tried to hold. The writer also calls attention to the differential as a promising field for inventive genius. I have been fooling with the differential problem some myself in connection with my little buggyauts and have investigated a number of devices. One of them little known to the trade is the invention of E. J. Gould, of Boulder, Colo., and seems to me to possess many good features. It was patented February 26, 1907, and the number is 845,409. First, it is cheap to build. This in itself is a big argument. It appeals to the maker for he saves money in building. It ought to appeal to the buyer for a device that is cheap to build is cheap to repair and maintain, if it is as good as the more costly device. Second, it seems to me to do the very thing that the regular device does not do, viz., prevent spinning of the wheels when they are in the air or on ice. In this respect it serves just as does a ratchet axle. But not quite so fully as does a ratchet axle. The eccentrics will transmit some power to the outer wheel in going round a corner. The ratchet axle will not. The regular device will drive the spinning wheel and let the other stand still, applying no more power to it than it takes to spin the other, so a rig is helpless with one wheel on a piece of ice. With the Gould device the fact that the eccentrics do not transmit power easily makes it drive the standing wheel almost wholly and the spinning wheel very little. So as I see it the Gould device occupies a middle ground and combines the advantages of the regular form with those of the ratchet axle but with few of the faults of either. It ought to be a snap for racing men and as a saver of tires it should be valuable for it is the slipping of the wheels, particularly in wet weather, that grinds out the tires.—C. E. Duryea.



Motor Car Shop Kinks

LOOSE GEARSHAFT BEARINGS

Although in theory all gearshafts should be perfectly lined up, perfectly straight, and a perfect fit in their bearings, it must be admitted that in practice these three conditions are seldom fulfilled; and the practical question is, "What limits of error can be tolerated?" Obviously no sort of categorical answer can be given to this question, since so much depends on the width of the gears, the length and stiffness of the shafts, the length of the bearings and other variable conditions. Gears with wide faces and small teeth require to be more accurately lined up than gears having narrow faces and large teeth. If either type of gear can be kept perfectly in line, so that its teeth have a bearing clear across their faces, it will wear much more slowly than if the teeth bear only across a portion of their faces. If the shafts are sprung, which may not impossibly be the case, the gears are much worse off than if the shafts are simply out of line, and the bearings also are worse off, since they will tend to wear oval, hour-glass shape, or otherwise, according to the particular kink in the shaft. When the drive is direct on third or fourth speed, usually the forward end of the squared shaft is reduced in diameter and enters a solid bushing A in the first spur pinion at the front end of the bear box. See Fig. 2. When this bushing wears out, or when the shaft B springs and has to be straightened and trued by grinding, there is no way of taking up the bushing, and if it is several thousandths large for the shaft the natural tendency of the latter will be to slant away from the secondary shaft C as far as the bushing will permit, and thereby have a bearing in the bushing only at its front end until the bushing has worn conical at that end. Under these conditions, the shock of suddenly engaging the clutch might bend the squared shaft at D, where its front journal joins the square. To avoid this possibility the bearing of the first spur pinion may be scraped slightly sidewise toward the secondary shaft, to approximately half the amount of the difference in diameter between the bushing and the shaft entering it. This will enable the bushing to give a bearing to the journal clear up to the squared part of the shaft. Unless this expedient is resorted to it is not safe to tolerate a greater difference in diameter between the journal and the bushing than five to eight thousandths of an inch. It is obvious that the same device of scraping slightly to one side or the other may be resorted to in other places, to bring shafts in line or to compensate for small degrees of wear in the bearings. For example, the after bearing of the squared shaft could be scraped away from the secondary shaft under the circumstances above mentioned. If the car has side chain drive, the bevel gears may be brought square with each other by scraping the two cross bearings in the same way.

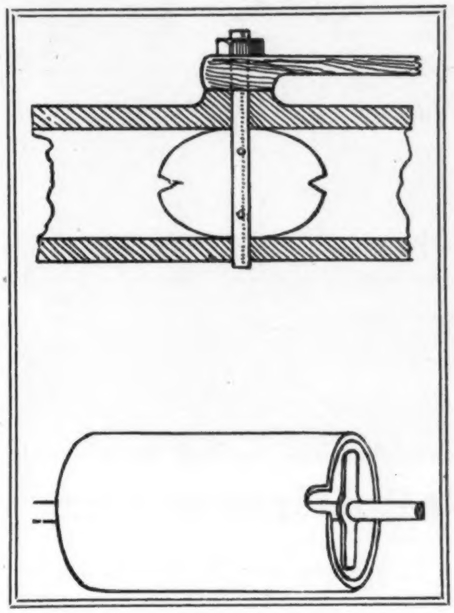


FIG. 1

ABRUPT THROTTLE VALVES

The throttle valves in some carbureters are so designed and arranged that when they are almost closed a movement of the lever a single notch will stall or race the engine. This is bad enough if the steering column is perfectly stiff and the throttle movements are perfectly positive. If the steering column is springy the chances are the throttle movement is no longer positive, and one may stall or race the engine without shifting the lever at all, simply by pushing or pulling on the steering wheel or by turning it in one direction or the other. When the throttle is well open the effect of this is imperceptible, but when the car is being maneuvered in limited quarters, as for instance on a garage floor, the fault is extremely annoying and may lead to accidents. The treatment will depend on the character of the throttle valve. If it is of the sliding or piston type, it is very easy to file a notch or slot in the edge of the valve, which will be opened by the first movement from tight shut, and will permit sufficient gas to pass to run the engine slowly with the clutch released. If this slot can be made fairly deep in proportion to its width the lever can be moved several notches without seriously affecting the speed of the engine. If the throttle valve is of the butterfly type the solution is not quite so easy. Fortunately, if this type of valve closes square across the pipe its first movement is fairly gradual. If the car owner has a carbureter with an elliptical butterfly throttle valve he will probably do best to take his choice between having the valve close tightly in its extreme position and having it close so that the motor will just run itself when idle. If he chooses the former alternative he will have difficulty making his engine run quietly on a slight opening of the throttle. If, however, he chooses the second alternative, he can secure quiet running of the motor when idle by filing a notch in one edge of the valve as shown in Fig. 1 and arranging his connection to the spark lever so that the slight amount of movement permitted by the spring of the steering column will not open the throttle. In throttles of different design other devices of similar nature can be employed when needed.

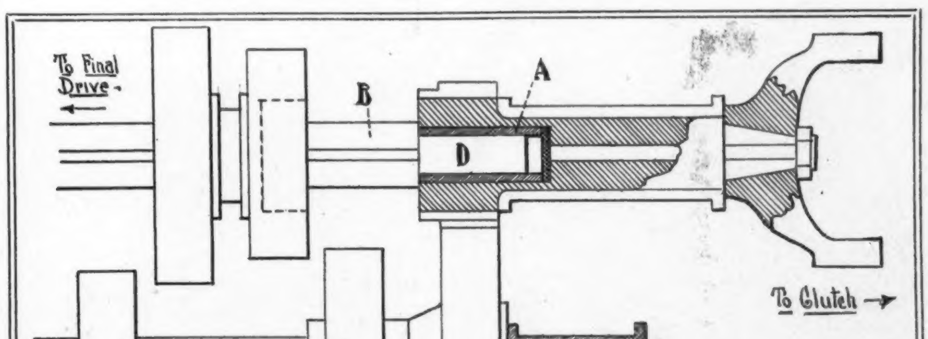
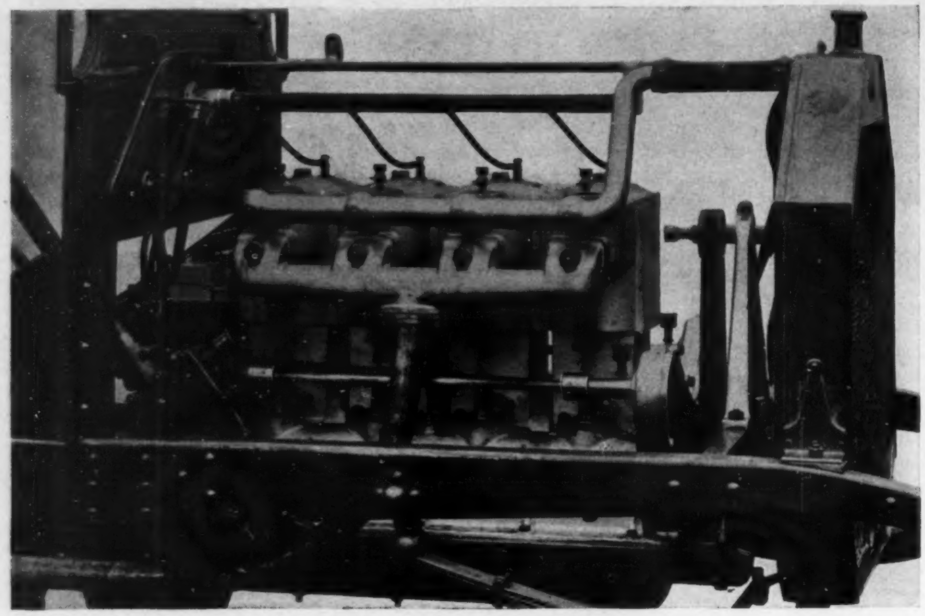


FIG. 2

METEOR 1909 MOTOR WITH SQUARE CYLINDER TRUNKS AND MAGNETO AT THE REAR



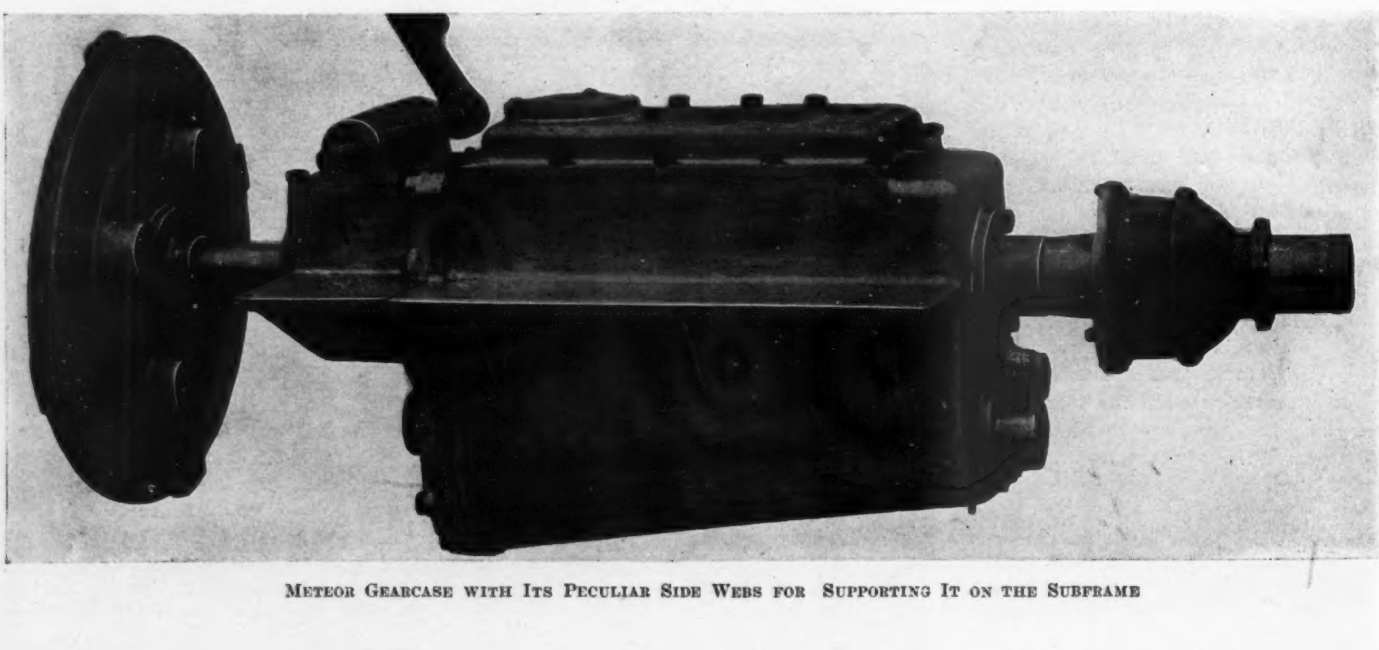
The 1909 Meteor 40-Horsepower Car

THE 1909 Meteor, the result of 3 years' experimenting and manufacturing by the Meteor Motor Car Co., Bettendorf, Ia., comes as a well boiled-down conventional five-passenger car, of the 3,000-pound class, in which very little in the way of innovation is used, but in which appears not a few of the designs looked for in the high-priced car. In brief, the Meteor is a 40-horsepower shaft-driven machine, with multiple-disk clutch, selective gearset, I-beam, and floating front and rear axles, double ignition and positive cooling system. Chrome nickel steel is used in the crankshaft, driveshaft to the rear axle and many other parts; and in not a single case are malleable iron castings made use of, the company rather placing its confidence in forgings cut from the solid block of steel.

A rather unusual appearance is given to the motor by the square cylinder trunks which rest directly on the crankcase. These cylinders cast separately with opposite housings for the valves have a 5-inch bore and a 5½-inch stroke, the horsepower rating being 40, according to the A. L. A. M. formula. In order to reduce the length of the motor as well as to facilitate casting, the front and rear faces of the waterjackets are cut away, and rectangular plates fitted. The crankcase is a two-part casting with the five bearings for the crankshaft carried on the upper half. At the forward end is a housing for the camshaft and layshaft gears. Use is made of hand-buffed aluminum pipes for the intake and exhaust gases as well as for both intake and outlet water pipes. The intake and exhaust manifolds are similar and the water connections are at the top side of the valve housings instead of in the cylinder head, this arrangement being somewhat like that employed on National cars for 2 seasons.

A rather unique arrangement is locating the Eisemann low-tension magneto and the five-feed mechanical oiler under the toe board at the rear of the fourth cylinder, the magneto on the right side, the oiler on the left and each driven by a separate shaft extending from the half-time gearcase at the front end. The shaft on the left passes through and drives the centrifugal water pump between which and the lubricator is a jaw coupling to permit of the removal of either without disturbing the other. Each layshaft has universal joints. Placing the magneto at the rear greatly reduces the length of the wiring, which is apparent by the motor illustrations, all of the wiring being encased in tubes. A double ignition system is employed, the magneto one, already referred to, and the battery set. The plugs for the magneto system are located over the intake valves. Cooling is by tubular radiator behind which is a belt driven fan supported on a triangular bracket on a cross piece of the frame, the top of the bracket being furnished with an eccentric means for adjusting the tension of the belt. The usual methods of adjusting the lubricating leads are furnished, the leads passing direct to the cylinders and the crankcase. To assist lubrication, one of the four compression rings on the pistons is placed at the bottom, which, in conjunction with two oil grooves in the piston, insures a copious distribution of the oil over the cylinder surface.

The multiple-disk clutch is of the regular alternating disk type, one set of disks attached to its shaft at the center, the other at the periphery of the disk. An easy method of adjusting the clutch ten-

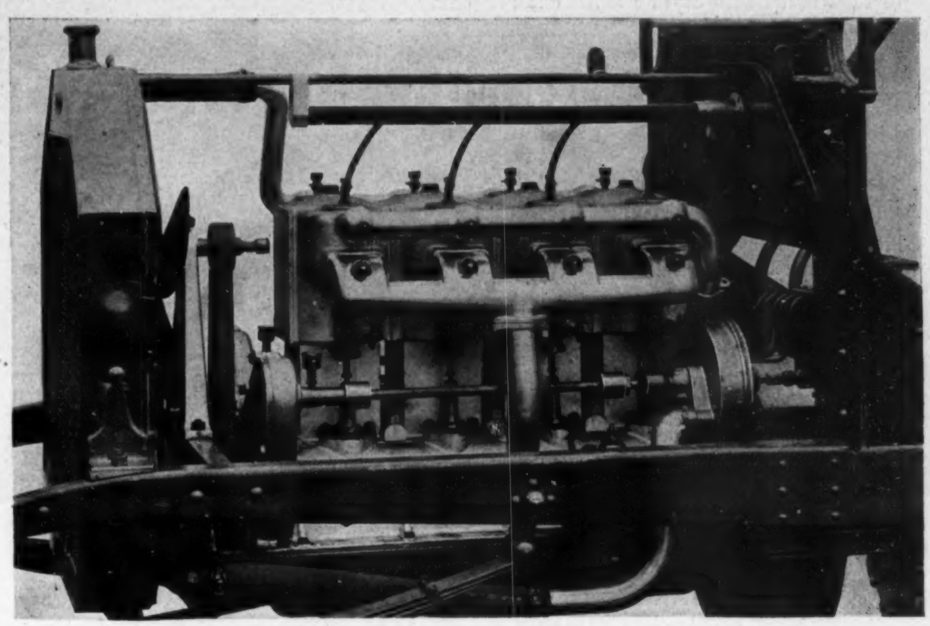


METEOR GEARCASE WITH ITS PECULIAR SIDE WEBS FOR SUPPORTING IT ON THE SUBFRAME

DEVELOPMENT

sion is fitted. The gearset with its three forward speeds and reverse, operated selectively, is carried in a one-piece casting, the front end of which is removable and the top covered with a large inspection plate. Formed integrally with the sides of the case is a horizontal web which is secured to the members of the subframe and is held thereto by bolts, these webs taking the place of supporting arms. The driveshaft with universal joints at both ends operates at a 2½-degree angle with the car loaded. Paralleling it on the left is a torsion bar which at its forward end is attached to a horizontal bolt carried on the subframe members, instead of, as generally done, attached through springs to a cross member of the frame. The driving strain is taken off the rear platform spring system by strut rods from the axle housing to the frame. Brakes internal and external members on the rear wheels are pedal and lever applied, each set being actuated through equalizers in the form of cross trees placed transversely of the frame and operating in slots in the side members of the frame. In order to lower the center of gravity of the car the side members of the frame are dropped in front of the rear axle. The forward axle is fitted with Timken roller bearings in the steering pivots as well as the top of the pivot hub.

METEOR MOTOR WITH ALUMINUM HAND-BUFFED GAS AND WATER PIPES ON EITHER SIDE

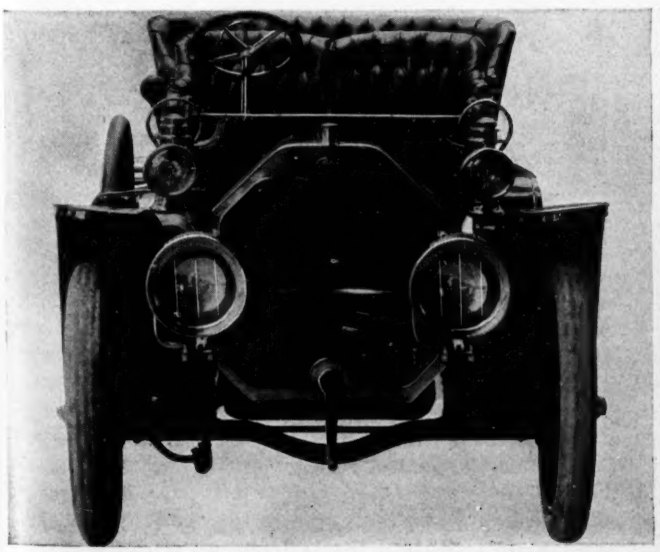


With Several Unique Features Introduced

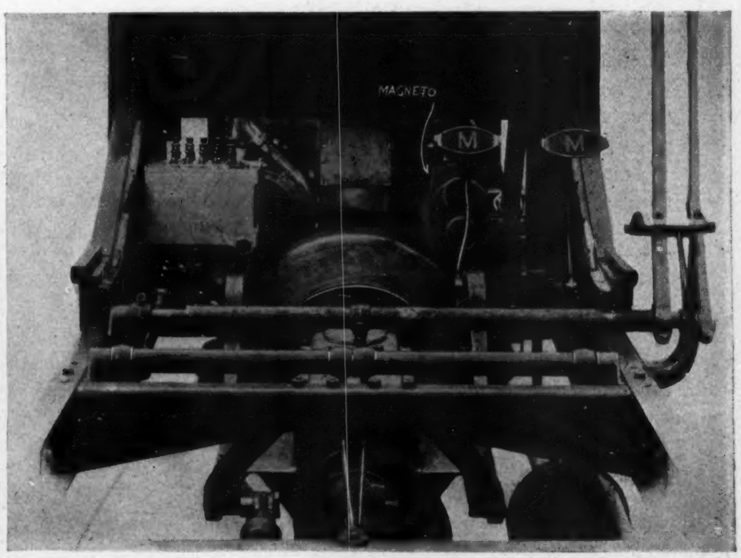
MOTOR CAR LITERATURE

"The Autocar Handbook," issued by Iliffe & Sons, Ltd., 20 Tudor street, E. C. London, appears in its second edition as a 215-page cloth-covered volume containing twenty-eight chapters based on a review and analysis of the modern motor car. Chapter one contains subdivisions as choice of car, running expenses per mile, first year's cost, second year's cost, second-hand cars, judging second-hand car's condition, selling the old vehicle, hiring and testing, choosing a new car, considerations of size and power, horsepower theory, general hints on purchasing, comparative advantages of steam and electric machines, and description an unreliable guide.

One of the really interesting additions to American motoring literature is "Motoring Abroad" by Frank Presbrey and published by The Outing Publishing Co., New York. The book, a sumptuously illustrated, 300-page cloth-covered volume, is an account of the author's 2 months' motoring trip through Great Britain and France, on which he "saw the country" not by following the beaten path of the tourist but by an itineracy compiled from day to day and frequently changed on the spur of the moment. Because of this the book is particularly interesting, covering as it does many of the motoring interests of these places heretofore untouched by the conventional tourist. The style of the author is clear cut and convincing, and the information given shows the vast amount of pleasure which may be derived from a short European tour, not a tour characterized by racing through the country, speeding from town to town, or viewing art galleries and cathedrals, but one in which every aspect of the beautiful is depicted and the unfamiliar familiarized. In illustrating his work, which is largely done from photographs taken en tour, the author has picked out incidents rarely reproduced in a magazine or in the clas journal field. Historic monuments and landmarks frequently overlooked in the mad rush for the cardinal wonders of the world have been brought to the foreground and the real character and true life of the people told.



FRONT VIEW OF TOURING CAR



OILER AND MAGNETO UNDER DASH

THE 1909 METEOR

WHITE DAY APPROPRIATELY CELEBRATED IN TOLEDO

All Riding in a Glide—The photograph on the next page shows a G Special Glide, the property of F. E. Farrell, a well known banker of Jacksonville, Ill. The children in the car do not all belong to Mr. Farrell but are the sons and daughters of the Farrell, Wadsworth, Crabtree and Yates families of Jacksonville, all related.

Horses Must Go—Owners and drivers of horse-drawn stage lines in Indiana are beginning to see the handwriting on the wall. There are only a few of the old time affairs left, the modern motor coach having supplanted the majority of them. George Straub, of Corydon, who has operated a stage line between that city and New Albany for many years is now organizing a company and will place a motor car in service at an early date.

Lowell Course Secured—The committee having in charge the road race of 250 miles at Lowell, Mass., on Labor day has managed to get the use of the highways in Lowell and Tyngsboro for the holiday and now the entry blanks are in the hands of the printers. Already a force of fifty men has been put to work grading and fixing such portions of the road as are not in the best shape. The main part of the highway will be that section of the boulevard that runs parallel with the Merrimac river and which is used for a speedway for trotters.

Converted Boston—Motor cars played an imported part in the battle and round up of the gang of yeggmen which terrorized Boston last week by shooting several people there and holding up several men in a saloon. The police department found that horse-driven patrol wagons were too slow and the proffers of motor cars by the Napier company and private individuals were gladly accepted. With the cars it was possible to send officers to different spots very quickly and cover a lot of ground that it would have been impossible to patrol with horses. The newspapers, too, secured motor cars and they followed the ones used by the police and in this way got their stories to the different offices very quickly. It was an admirable illustration of the efficiency of the motor cars for quick service and may lead to their adoption by the police department in Boston.

After the Trolley People—After being prosecuted almost to persecution, the worm has turned in Michigan City, Ind., and motor car owners are directing a crusade against the local street car company. Complaint is made that the cars run at speed far in excess of the limit and that they fail to stop at the down town crossings, making it particularly dangerous for motor car drivers.

After Speed Traps—The Massachusetts state association has at last taken cognizance of the traps being operated in the Bay State and President John P. Coghlin of the Worcester club, who is chairman of the state association, has had postals sent to the members of the organization asking them to notify him of any traps they may encounter on their travels. Bulletins will then be issued and sent to the members. However, as most of the places where traps are operated are well known it is doubtful if any good will result.

White Day at Toledo—Circus day and the Fourth of July are all right in their own way, but the truly great day and the one to be remembered in Toledo for a long time to come is "White day." If there is any doubt about it ask any one of the thirty-six youngsters whose laughing faces appear in the accompanying photograph. This festal day was the product of the efforts of two enterprising Toledo young women, Miss Minnie Baum and Miss Georgia Bowen, who, crystallizing their ideas into action, secured the cooperation of the philanthropic S. J. Fisk, manager of the Toledo branch of the White company, and on July 22 gathered together a bunch of unfortunate children for an outing. The two big White steamers fairly groaned beneath the load of shouting youngsters as they made their way over country roads and along shady byways. The country ride, the festivities at the grounds of the Toledo Educational Club which were placed at their disposal, and the other good things which went to round out the day's program, made it one long to be remembered by the children.

Dull Day for Trappers—The yellow flag brigade of the Atlantic City Automobile Club was on the job all last week, and as a result the constables and magistrates in Atlantic county had a rather unprofitable time of it. The threat of the latter to cause the arrest of the yellow flaggers was not carried out, the club officials coming out with a statement that they were not endeavoring to cheat the law, but to prevent infractions of it. They reinforced their claim with the statement that they are just as anxious to put a stop to the speeding mania as are the authorities, and will arrest and prosecute persistent violators of the law on their own hook when necessary.

Bay State Totals—The Massachusetts highway commission has just made its return to the state treasurer regarding the number of motor cars registered for the first 6 months of the present year. The total number amounts to 15,767 and from the registrations there has been turned over to the state $100,782. For some time past cars have been registered at the rate of about fifty a day. Many cars from other states have been among those registered and never before in such a short space of time has the commission collected such a large sum of money. Since January 1 last 366 dealers' licenses have been issued and 1,630 motor cycles registered. Compared with the figures of the same period of a year ago when only 4,953 cars, 535 motor cycles and fifty-eight dealers were registered, the figures this year show a great gain in the industry. Up to the end of July of last year 3,293 private operators got licenses and 3,977 professional chauffeurs were listed. For a corresponding period this year the figures have been respectively 4,057 and 4,480. When it is considered that the professional operators must pass an examination and

that many are turned down it gives a still greater insight into the popularity of motoring. The percentage of those refused licenses is stated by the commission to be about 30 per cent.

Good Roads Meeting—A good roads conference is to be held at Richmond, Ind., on August 8 when the question of building more roads and improving those now in use, will be discussed at length. County commissioners, township trustees and road supervisors and farmers and motor car owners from Randolph, Union, Henry, Wayne and Fayette counties in Indiana and from Preble county, Ohio, will attend and an organization will be effected.

Paying the Fiddler—Maryland motorists are up in arms against the action of the Frederick and Jefferson Turnpike Co. in doubling the charges of toll for motor cars in Frederick county. Owners of machines are now compelled to pay 32 cents for a two-seated car over this road, a distance of 8 miles. This is at the rate of 4 cents a mile. The authorities of the turnpike company claim that their highway is one of the best throughout the country and that it is being damaged to a great extent by the motor cars. They state they feel justified in increasing the toll so that the motorists, in this way, might pay for the damage their cars cause to the roads.

Would Show Scorchers—Road Engineer W. W. Crosby, of Baltimore, Md., has come out with a new remedy to stop the speeding of motorists on the highways in the various sections of the state. He recommends that the road builders should construct at frequent intervals in the macadam artificial trenches or ridges extending across the crown of the road, and of a height or depth sufficient to deter the most rabid scorcher from efforts to break the speed records over it. Mr. Crosby admits that these breakers would be slightly objectionable to ordinary travel, but that they should be used if the motorists persist in disobeying the speed laws.

Invents Owner's Permit—Through its secretary, H. C. Harbach, the Quaker City Motor Club has taken cognizance of the recent numerous motor car accidents in and around Philadelphia by suggesting that in all cases when loaning their machines to their chauffeurs or others owners shall issue a permit containing the name of the car; object of the trip, with particulars as to starting point and destination; time of start and arrival at end of journey, and a full list of names and addresses of all occupants of the car. To protect themselves garage owners should insist that these "owner's permits" be recorded before allowing any but owners to take cars from their premises. A policeman stopping a car which the owner was not driving or in which he was not a passenger could insist on seeing the "owner's permit." Some sort of tabs must be kept on cars, says Secretary Harbach, if "joy riding" accidents are to be kept within bounds. An owner has a sense of responsibility, says he, which an employe or a borrowing friend cannot possibly possess; and as a consequence the average owner is much more careful.

Women Tourists Reach New York—Miss Alice Potter, who, with three women friends, started from Chicago on July 20 to drive to New York and return, arrived in New York on July 29, having completed the first leg of her trip across the continent in just 9 days. Miss Potter drives a 30-horsepower Haynes. With Miss Potter are her three friends, Miss Ada Dangerfield, of Elgin, Ill.; Miss Elizabeth Forrest, of Geneva, Ill., and Miss Elizabeth Hunt, of St. Charles. Ill.

Boston to Have Test—The touring committee of the Bay State club has started work on the plans for the endurance run which is to be held at Boston early in September. This run will be on a much more elaborate scale than any that has ever been undertaken by the club. The cars will go from Boston to the White mountains and return and it will be a continuous run of 24 hours. The bonnets will be sealed and the requirements will be very rigid.

After the "Joy Riders"—President Sherlock Swann, of the police board of Baltimore, Md., is hot on the trail of chauffeurs who indulge in what he styles "joy riding"—that is, those drivers who take their owners' cars without consent and drive recklessly through the streets between midnight and daylight. Members of the police motor cycle squad will closely scrutinize cars containing merry parties during the early morning hours. The numbers of the licenses will be taken and an investigation made to ascertain whether or not the owners give their consent to use the machines. The policemen will not be overburdened with instructions. It will be their duty to see that violators of the traffic laws are prosecuted; that motorists do not speed, and particularly that "joy riding" is abolished.

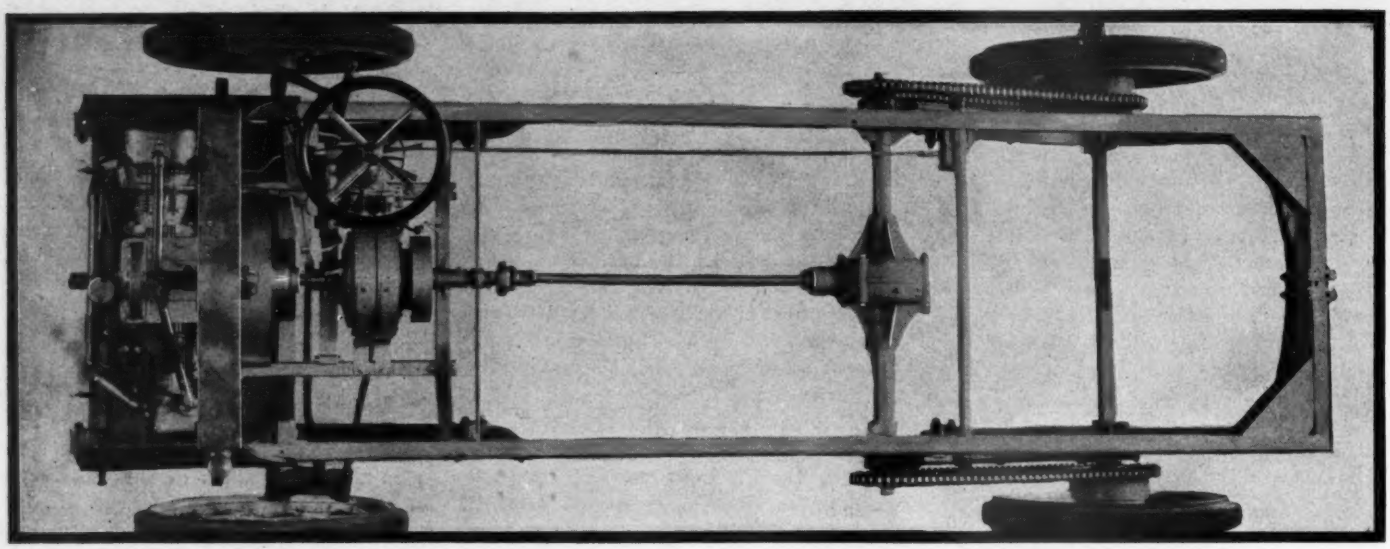
Club at Hamburg—Hamburg, Pa., with nearly two-score motorists to draw to, has just formed a club including about all of them. The organization meeting was held last week at the West End garage, when W. E. Schmick was elected president; M. L. Buchman, vice-president; F. Y. Bowman, secretary, and M. E. Seidel, treasurer. Charles D. Berkey, Dr. R. N. Hengst and W. E. Printzman were appointed a committee to draft a constitution and by-laws. They will report at the meeting for permanent organization Friday evening, August 7.

Connecticut Gymhkana—Plans are being outlined for a series of gymhkana sports open to the members of the motor clubs of Concord and Manchester, N. H., in a few weeks. W. H. Hurd, a prominent sporting man of Manenester, is going to offer a trophy to be contested for by the two clubs. It will be a yearly event thereafter, the club winning the greatest number of points retaining the cup, a new one being put up each year. The sports will be held at Hooksett.

After the License Fees—The police department at Indianapolis is serving warrants on motor car owners who failed to pay the city's $3 annual license fee last year. There are 234 of the warrants to be served in all and of this number about twenty-five have been served and the victims fined $1 and costs each, amounting to $11. As the city prosecutor gets $5 on each case he is much interested in pushing the arrests. Many persons did not pay the license fee last year as the ordinance was being tested in the courts. Those who are paying the 1908 fee are being compelled to pay last year's license or submit to arrest and fine.

YOUNGSTERS AT JACKSONVILLE, ILL., ENJOYING RIDE IN A GLIDE

NEW GRABOWSKY COMMERCIAL VEHICLE

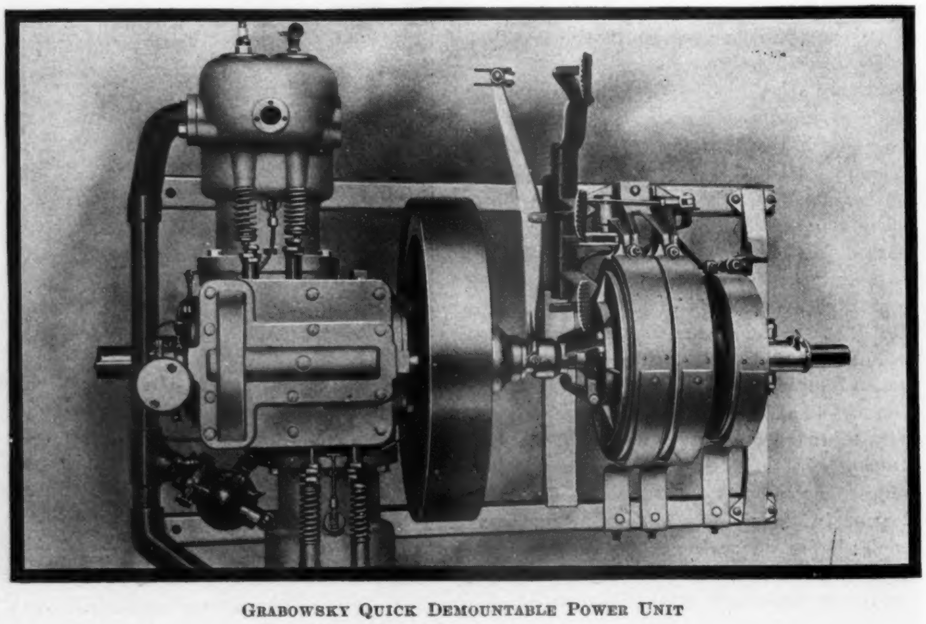


GRABOWSKY COMMERCIAL CHASSIS WITH TWO-CYLINDER MOTOR AND PLANETARY GEARSET

DETROIT, the greatest motor car-producing city in America, has one more to its credit, namely, the Grabowsky delivery wagon, manufactured by the Grabowsky Power Wagon Co., which concern is under the management of Max H. Grabowsky, designer of the machine. As is known to most of Motor Age readers, Mr. Grabowsky was the designer of the Rapid trucks, he having been connected with the Rapid company from the time of its organization until last September, when work was commenced upon the present Grabowsky vehicle. The Grabowsky commercial chassis has two or three particularly meritorious features, one of which is the quick detachable power plant, consisting of the two-cylinder opposed motor and the two-speed planetary gearset. The motor and transmission, with their several parts, are located on a subframe, consisting of two channel sections. By the removal of two bolts and the disconnecting of six quick detachable connections, the entire motor and transmission may be removed intact. By this system of assembling, it is possible to change the power plant of the vehicle in a few minutes. In order to make the changing free from ignition troubles, such as disconnecting and connecting battery wires, the ignition connections are made by running all of the wires through a plug system, which is connected and disconnected by removing a master plug. The second feature in the wagon is the lack of obstructions on the frame, which allows of the body sliding on or off the rear without the slightest difficulty, this condition being an important consideration where different bodies are used. Third in importance comes the exceptional accessibility of the motor, mounted transversely in front and with the radiator located above and to the rear of the motor, so that with the bonnet raised it is possible to gain access without obstruction to all of the motor parts. The car has hardened steel bushings in twenty-eight different places, where renewals are most frequent. This arrangement provides a means of making replacements at small cost.

The vehicles are built in 1 and 1½-ton styles at the present, but it is rumored around the factory that 3 and 5-ton chassis will be added to this list in the near future. The motor of the opposed type has cylinders with 5¼-inch bore and 5-inch stroke, the rating for which would approximate 22 horsepower. Both cylinders and pistons are bored and turned to size, after which they are ground. The pistons carry three compression rings and one oil-retaining ring, all four being of the square lapped-jointed type. The crankcase is a cubical casting, heavily ribbed to resist intense strain, and carries the mechanical lubricator at its base, the oil supply being retained in an oil-well situated within the base of the crankcase. The sight feed is placed at the entrance of each bearing and on the cylinders. Other parts of the car, with the exception of the transmission shaft bearings, are lubricated by grease cups. The crankshaft, a chrome nickle steel drop forging, hardened and ground to size, is carried on 1⅞-inch bearings; the camshaft with its cams, formed integrally, is made from a solid bar of alloy steel; wrist pins are steel tubes with a 1¼-inch diameter; push rods for opening the valves are 15/16-inch steel tubing hardened and ground; valves are chrome nickel steel stems with cast iron head and all of the engine bearings are Parsons' white bronze.

The engine accessories include a timer located at the front of the crankcase in a vertical position and driven by a spiral gear from the camshaft, the shaft driving the timer being continued downwards to operate the oil pump. Current for the ignition system is taken from a 6-volt 60-



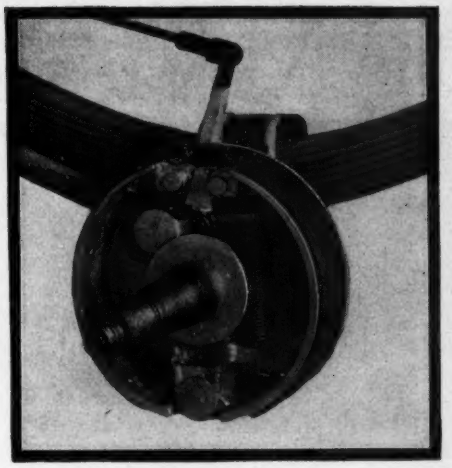
GRABOWSKY QUICK DEMOUNTABLE POWER UNIT

ampere storage battery, both coil and battery being located in separate compartments under the seat. All ignition is protected by oil-tight casings.

The motor is cooled by water circulated by thermo-syphon and in conjunction with the radiator is a condensing tank, placed 4 inches above the inlet chamber, so that water returning from the engine in a steaming condition, rises through the condensing tubes, collects in the condensing tanks at the top of the radiator, and returns to the main tank in a cooled state. The water circulates from the base of the radiator to the bottom of the cylinders, returning from the top of the cylinders to the lower radiator tank.

The transmission system differs not a little from that previously designed by Mr. Grabowsky, which is no doubt due to the transverse forward location of the motor. The two-speed planetary gearset is located immediately in the rear of the motor, and has a diameter of 12 inches, with gears of 1¼-inch face. The friction bands for the low and reverse speeds are of spring steel, lined with an asbestos copper combination and the high-speed clutch is of the self-retaining cone type. Power is transmitted from this gearset through a driveshaft with universal joints to the jackshaft placed 32 inches in front of the rear axle.

The brackets supporting the jackshaft housing are riveted solid to the side members of the frame, and radius rods for chain adjustment extend from the jackshaft housing to the rear axle and are of exact centers with the jackshaft of the jackshaft. Double side chain drive is used in the transmission. On the rear wheels are brake drums within which are internal shoes expanded by cam action, consisting of a hardened steel wedge operating between two hardened rollers, the rollers being carried in the ends of the brake shoes. Brake adjustment is by raising of this wedge instead of readjusting the connecting levers or rods. The brake drums are 10 inches in diameter and 2½ inches wide. On the engine shaft is an emergency drum brake 10 inches in diameter with 2¼-inch face.



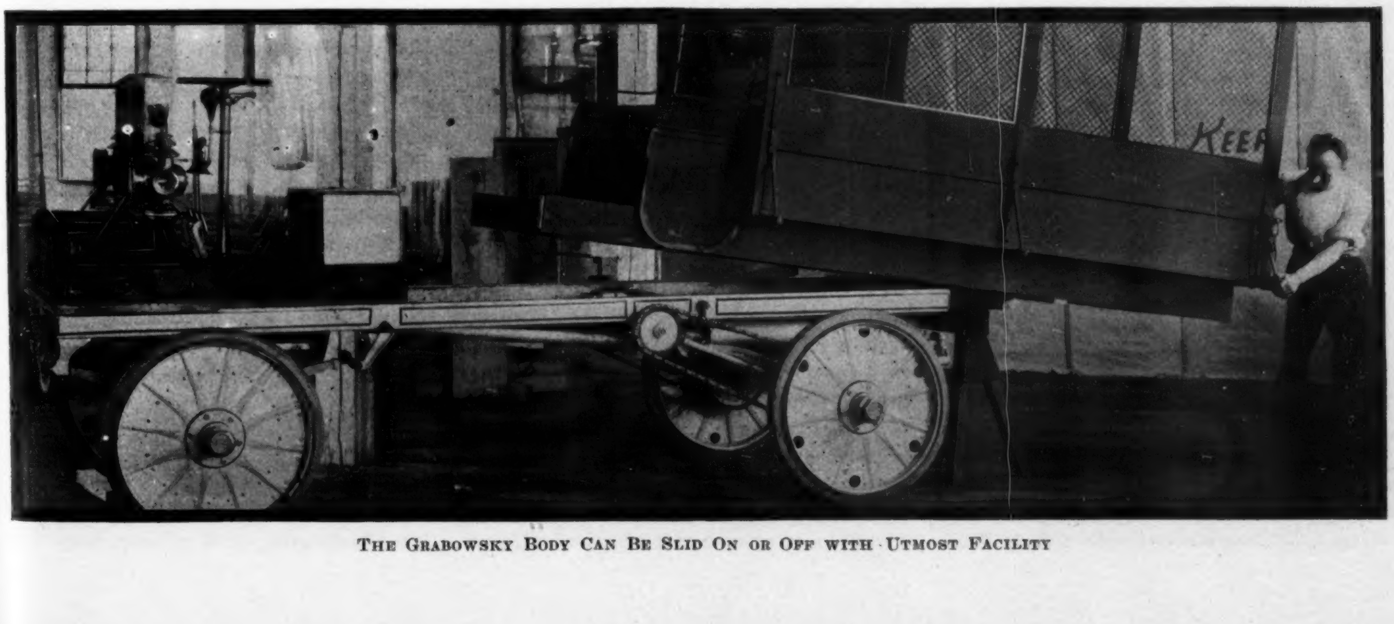
GRABOWSKY EXPANDING BRAKE

The running gear of the car is a stout, well-designed construction, assembled around a pressed steel frame of channel section 4 inches deep, 2-inch channel lips and ¼-inch stock. The side members of this are re-enforced by 6-inch gusset plates. The spring suspension includes a pair of forward semi-elliptics and a platform system in the rear, with side and cross members directly beneath the side and end pieces of the frame. The spring leaves are 2¼ inches wide and of three thicknesses, there being eight leaves to the spring. Both axles are of the same material and dimensions and are of rectangular cross section, 2¾ inches vertical depth and 1½-inch width. The forward axle carries 6-inch jaws for taking the hub of the steering spindle, which hub is held in place by a pin 1 inch in diameter. Taper roller bearings carry the wheels. The steering gear is of the pinion and sector type, the main shaft bearing eccentric so that lost motion caused by worn gears may be taken up.

ACCESSIBILITY OF GRABOWSKY MOTOR

PROTECTING HOME TRADE

The newly established motor bus line at Wapakoneta, O., is proving to be a success and so flourishing is the passenger traffic it has picked up that the smaller muncipalities are taking steps to fight what they deem an unwarranted trespass upon their trade. Many of the farmers and even the citizens of the smaller towns have availed themselves of the opportunity to do their trading at larger points and so well has the line been patronized recently that the merchants of some of the little towns have taken the matter in hand in an effort to put a stop to the business. This opposition recently took the form of an ordinance which was passed by the council of Jackson Center, O., one of the termini of the route, which practically prohibits the operation of the line in that village.



THE GRABOWSKY BODY CAN BE SLID ON OR OFF WITH UTMOST FACILITY

Among the Makers and Dealers

KEYSTONE MOTOR CAR CO.'S GARAGE AT OAKLAND, CAL.

Farmington's Garage—Thomas Bass has opened a new garage at Farmington, Ill., the building being 40 by 80 feet. Bass handles the Reo, Premier and Ford. Farmington is located 24 miles west of Peoria and 30 miles southeast of Galesburg.

Made by Bowser—S. F. Bowser & Co. point out that the 10,000-gallon gasoline tank recently installed at the Maxwell factory at Tarrytown was built by them. A similar one will be installed at the Maxwell's Newcastle plant. In both places the regular Bowser system will be used.

Newby Has Oldsmobile—The Oldsmobile, for which Charles Newby is the Indiana representative, has established headquarters in Indianapolis with the Indianapolis Motor Car Co., at 415 East Market street. As the Indianapolis Motor Car Co. handles commercial vehicles exclusively the arrangement is quite satisfactory to both parties.

Changes in Washington—C. Royce Hough has resigned as general manager of the Pope Automobile Co., of Washington, D. C., to accept a similar position with the Motor Car Co., succeeding Wallace C. Hood, who has been appointed sales manager of the Zell Motor Car Co., of Baltimore, Md., with headquarters in the latter city. Elliott P. Hough has been appointed manager of the Pope Automobile Co.

Bus Line Established—The Spencerville-Lima Auto Transit Co. has opened its lines for business in Toledo. Cars capable of accommodating twenty passengers are in service and trips will be made daily. Headquarters have been established at Spencerville, O., for the present, but it is probable that later they will be removed to Lima. Officers of the company were elected this week as follows: President, A. F. Henry, Spencerville; vice-president, J. P. King, Lima; secretary-treasurer, R. R. Kennedy, Spencerville. The directors are: A. D. Aiken, E. M. Wein, George McMillen, F. C. Snow, F. A. Burkhardt, L. C. Binkley and R. V. Dickey.

Toledo Plant Money-Maker—The monthly report of the receivers of the Pope Motor Car Co. shows that the plant is a money-maker, $65,425.48 having been added to the cash balance during the month. The sales amounted to $102,265.91, while the factory pay roll was $16,533.28 for about 200 workmen.

New Trade Angle—There are possibilities of a complete revolution in Franco-British relationships if a recent action brought against the Darracq firm meets with success. At the tribunal of commerce three of the most distinguished lawyers of France, acting for a group of persons whose names have not been made public, petitioned for the dissolution of the A. Darracq Co., Limited, on the grounds that the headquarters of the company were in London while the factory was in France. M. Poincaret, a former minister of finance, representing the Darracq company, opposed the motion. The judgment of the court was deferred. Within the past few years a large number of prominent French firms have been converted into British limited liability companies, the changes being made on account of the better hold the firms would thus have on the British market and various administrative advantages. Up to the present, however, no one has thought of contesting the validity of such a proceeding. Officials of the Darracq company, interviewed on the petition, declare emphatically that the whole affair is one of private jealousy, and maintain that there is nothing on the statute book preventing a French factory having its official headquarters in another country. The head of a rival firm also having large interests in England, is declared by the Darracq people to alone be responsible for the legal proceedings. The declaration is made that an action for damages will be brought against the instigator of the petition, who is said to be a leader in the industry and one of the most prominent members of the French club.

Working on Acme Racer—It is now stated that the Acme racing car will be ready for testing on the roads of Berks county by August 15. Tests of the new engine in the Acme company's factory at Reading have been most satisfactory and the work of assembling the car is being actively carried forward. The new car will have six cylinders of a bore slightly less than 5 inches and with 5-inch stroke. It will have a shorter wheelbase than the six-cylinder stock cars already seen on the track and will be lighter in spite of its large engine.

Joseph Grossman Changes—Joseph Grossman, for the past 2½ years treasurer and manager of the National Sales Corporation, has resigned from that position to go into business for himself. He will embark in the special advertising field, with headquarters in Cleveland. Prior to assuming management of the National Sales Corporation, Mr. Grossman was connected with the Continental Caoutchouc Co., and for several years prior to that he was a member of the firm of Emil Grossman & Brother, of Cleveland, and later of New York, publishers of the Motor Review.

Refuses Show Space—Space is to be reserved for motor cars at the Indiana state fair, which will be held in Indianapolis September 7-11. The board of agriculture has set aside a space 350 by 45 feet and will place an officer in charge so motor car owners can see the various attractions without being afraid someone will steal or injure their cars. The board has declined, however, to set aside any special space for motor car exhibits, apparently determined that horse-drawn vehicles and farming machinery shall be given the preference.

Fanning Turns Hoosier—Frank J. Fanning, formerly of the Levy & Fanning company, of Chicago, has taken the Indianapolis agency for the Chalmers-Detroit. Other agencies closed by the Detroit concern are as follows: T. F. Kiser, Dixie Automobile Co., of Atlanta, Ga.; C. E. Whitten, Boston; E. P. Brinegar, of San Francisco; S. S. Primm, of the Park Auto Co., of St. Louis; Arthur Stanley Zell, of the Zell Motor Co., of Washington and Baltimore; E. C. A. Armstrong, of the Western Motor Car Co., of Los Angeles; J. S. Harrington, of Worcester, Mass. Bar-

clay Auto Co., Minneapolis, and Grant Brothers Auto Co., of Detroit. The Chalmers-Detroit company announces it has already contracted for 2,500 cars out of an output of 3,000.

Stock Company Formed—Deibler & Russell, of Berlin, Wis., assemblers and manufacturers of small parts, are forming a stock company to build cars. Contracts have been closed in Detroit for furnishing the concern small parts.

Fine Garage in Oakland—The Keystone Motor Car Co., of Oakland, Cal., has one of the handsomest garages on the coast. It was erected at a cost of $12,000 at Telegraph avenue and Twenty-second street. The exterior design approaches the mission style. It has a floor space of 16,000 square feet, a well-equipped workshop employing six men. The company has the agency for the Acme, Overland and Marmon cars. D. C. McCord is manager.

New Title for Bennett—The New York branch of the White Co. will hereafter be known as the eastern branch and George W. Bennett will take the title of eastern sales manager. The territory to be handled by the eastern branch comprises New York state as far as Rochester, the eastern counties of Connecticut, part of Berkshire county, Mass., the entire states of New Jersey and Delaware and the eastern half of Pennsylvania. The office of the White Co. in Philadelphia becomes a sub-branch under the control of Mr. Bennett.

Will Handle Brush—The Brush-Nichols Co. has opened a garage and salesroom in the rear of the city postoffice at Washington, D. C., and will handle the Brush car.

New Garage of Thomas Bass at Farmington, Ill.

Adopts Motor Truck—The Union Transfer and Storage Co., of Terre Haute, Ind., has decided to make an experiment with motor trucks. Two Reliance trucks have just been received and placed in service. The company hauls baggage between residences, hotels and railroad stations and this is one of the first concerns of its kind in Indiana to adopt the motor truck.

Gear Company Reorganizes—A reorganization of the Warner Gear Co., of Muncie, Ind., was completed last week and the new company has filed articles of incorporation with $500,000 capital stock. Thomas W. Warner, Hugh L. Warner, Abbott L. Johnson, William E. Hitchcock, Thomas Morgan and Ray P. Johnson are the principal stockholders and also are directors.

PANHARD'S DEATH RECALLS EARLY DAYS OF MOTORING

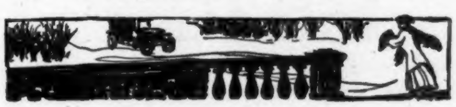
Paris, July 26—The death of Louis Réné Panhard, one of the founders of the Panhard-Levassor company recalls interesting chapters in the history of the industry. It was in 1883 that the old-established firm of Perin, Panhard & Co. became Panhard & Levassor, M. Perin having died and Levassor, up to that time one of the leading engineers, being elected as partner. The firm was then established in the Avenue d'Ivry, Paris, on the site of the present Panhard-Levassor factory and was engaged in the manufacture of band saws and wood working machinery. In 1889 M. Sarrasin, the holder of the French patents for the Daimler engine, requested the Panhard-Levassor firm to build him a motor according to plans which he supplied. Panhard agreed, the actual work being placed in the hands of his partner, Levassor. The same year Sarrasin died, his widow secured the patents, but knowing nothing of mechanics engaged Levassor as her engineer and took him with her to Germany to arrange the formalities attendant upon the dissolution of the German syndicate. On their return Madame Sarrasin was engaged to be married to Levassor, and it was in this way that the Daimler patents entered the Panhard-Levassor factory. A small portion of the workshop was set aside for the construction of horseless carriages, eight men being employed in manufacturing a quadricycle of 1¾ horsepower. After nearly 3 years' labor the little highwheeled ugly looking buggy was able, towards the end of 1892, to run from the factory to the Point to Jour and back, a total distance of about 6 miles, without a stop. It was the first success and also the occasion of the sale of the first motor car the world had known, the buyer being M. Verlinde, a chain manufacturer at Lille.

Panhard and Levassor kissed one another; the former proposed to build a special factory; the latter replied "You are mad." The factory was built, it produced the car which won the world's first motor car race from Paris to Rouen in July, 1894, and a year later was victorious in the Paris-Bordeaux and return race with a 4-horsepower motor, Levassor driving. In 1896 the firm took part in the Paris-Marseilles-Paris race, during which Levassor overturned his car and received injuries which caused his death the following March at a time when all ill-effects appeared to have been overcome. The firm was then converted into the Societe des Anciens Etablissements Panhard et Levassor, with a capital of $1,000,000, which was all subscribed by half a dozen members of the firm and their friends.

While continuing the manufacture of wood-working machinery, which is even now a branch of the firm's activities, the Avenue d'Ivry factories were considerably extended and an era of success was entered upon which is without parallel in the history of the motor car industry. In the course of a few years the whole of the Avenue d'Ivry factory, comprising the ground, buildings and machinery, has been paid off, and is put down on the balance sheet at a franc. It is declared that if the manufacture of cars were stopped there is still a reserve fund sufficient to pay the shareholders a perpetual 5 per cent dividend.

It is interesting to note that what is known as the Panhard car owed very little to Louis Réné Panhard, most of the early experimental work being done by his partner Levassor. Although Panhard was always a moving spirit in the conduct of the firm, he was not, even after the death of his partner, responsible for the various mechanical improvements which kept the firm in a leading position for a number of years and which have tended to give it a world-famed position.

The funeral ceremony of the late M. Panhard took place at the Madeleine church, Paris, and was attended by practically all the French constructors, leading members of the Automobile Club of France and by a strong delegation from the factory. M. Panhard was an officer of the Legion d'Honneur and a Chevalier of the Merite Agricole.



Development Briefs

AUXILIARY GASOLINE TANK

The latest improvement in the 1908 Rambler cars is the attachment to the four-cylinder models of a supplementary gasoline tank on the left side of the engine immediately in the rear of the carbureter. Its attachment is for hill-climbing work, it sometimes happening on very steep hills that the gasoline will not flow from the tank to the carbureter by gravity. This tank is of capacity to carry the car on an ascent of several miles and is so arranged that gasoline will flow into this tank on level or slight ascent; but the gasoline cannot, under any conditions, return to the main fuel tank. The tank is 10 inches long and 4 inches in diameter.

Rambler Supplementary Fuel Tank

NEW POWER TIRE PUMP

The Eberman Auto Appliance Co., Chicago, is marketing a tire pump which, as illustrated, is a single-cylinder air-cooled pump driven by frictional contact from the flywheel of the motor. The end of the piston rod of the pump connects with a wheel which can be made to bear upon the periphery of the motor flywheel. This frictional contact is established by means of a small lever. The pump operates at fast speed, the engine of the car running at 200 to 300 revolutions per minute, and the pump much faster. Owing to the size of the pump, it occupying a space of 5 inches by 9 inches, there is room on the majority of cars to attach it without interference on the motor space beneath the bonnet.

WARNER DOUBLE-BAND CLUTCH

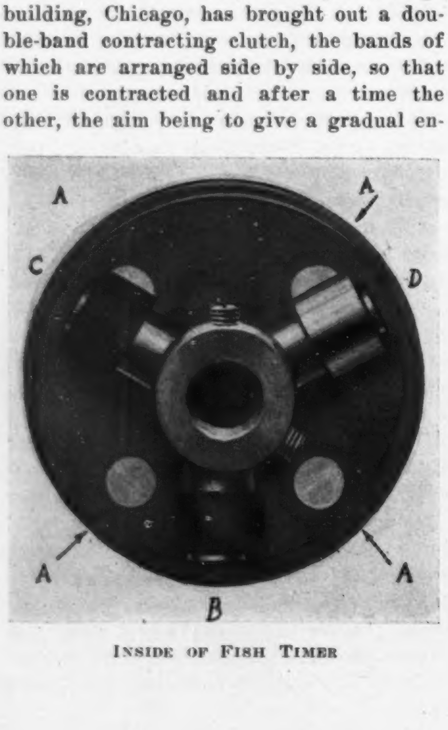
In order to overcome the too sudden gripping of a clutch when being engaged, the Warner Clutch Co., Railway Exchange building, Chicago, has brought out a double-band contracting clutch, the bands of which are arranged side by side, so that one is contracted and after a time the other, the aim being to give a gradual engagement. Two illustrations of this clutch are given, one a sectional view, the other a plan of the clutch as seen from the rear. Shown in the plan view is one of the bands B, contracting on the drum D. One end of the band is secured at B1 and is adjustable by means of the screw S with lock nut. The other end of the band B2 is curved to receive the end of the toggle C, the contraction of the band being by the plunger P tending to bring the toggles C C to a horizontal position at which time the band B clamps the drum D firmly. The other band E is located alongside the band B and has its toggles C1 placed diametrically opposite to the toggles of the band B. The sectional illustration shows how the drum D is keyed to the shaft F and how the cast steel flywheel H, with its protecting plate K, completely houses the two clamping bands B and E. In operation the band B engages first and the band E commences engagement as soon as B is completely engaged. The clutch is released in the ordinary manner by attachments with the collar N.

THE FISH TIMER

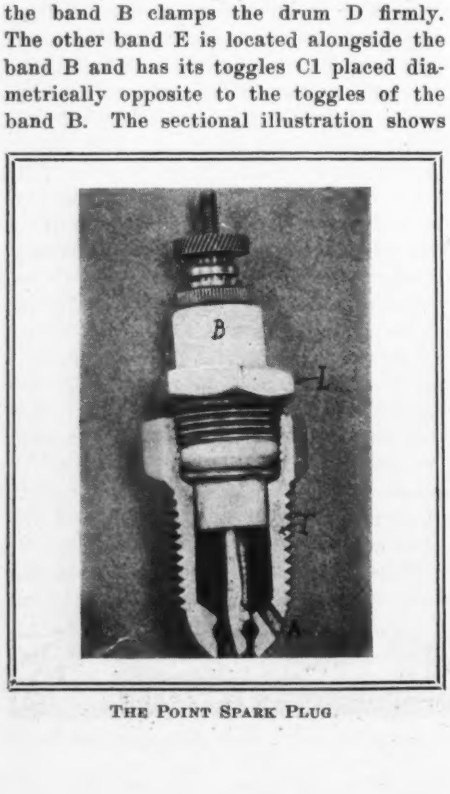
The Factory Sales Corporation, Chicago, Ill., is marketing the Fish timer which differs considerably from others on the market. The important point in its make-up consists of a three-arm spider, two arms of which, B and C, carry at their ends fiber rollers and the third arm D a tool steel roller hardened and ground, this latter acting as a traveling contact point. The fixed contacts A are located in a fiber disk, rotably seated on an upwardly extending shaft from the center of the contact carrier. Between the disk and the carrier shaft is a bearing made loose enough to give some freedom of action to the disk. The disk is supported on three rollers, already mentioned, and is held in positive contact therewith by a light spiral spring, which assures contact with the three rollers at all times, which is one of the cardinal virtues of the timer, in that it is intended to insure certain contact. The current is delivered to the four contacts A through the tool steel ring D, the fiber rings, B and C, being only for guiding purposes.

IMP GASOLINE TORCH

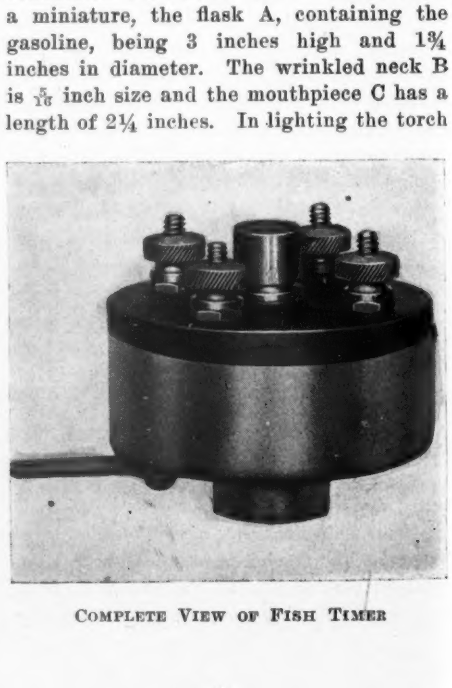
The Frank Mossberg Co., Attleboro, Mass., manufactures the Imp gasoline torch used for soldering and heating in connection with motor cars. The torch is a miniature, the flask A, containing the gasoline, being 3 inches high and 1¾ inches in diameter. The wrinkled neck B is $\frac{5}{16}$ inch size and the mouthpiece C has a length of 2¼ inches. In lighting the torch



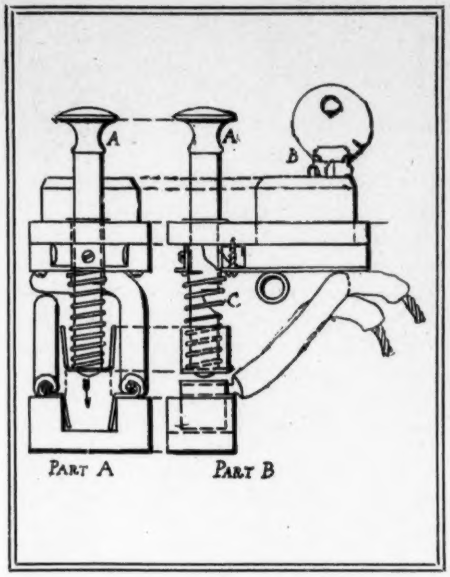
Inside of Fish Timer



The Point Spark Plug



Complete View of Fish Timer



ELECTRIC LOCK FOR MOTOR CARS

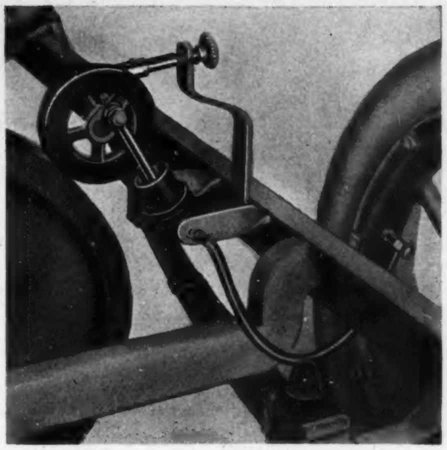
a lighted match is held under the neck B for 30 seconds. No air pump is needed in connection with it. Complete, the torch weighs 3½ ounces and has a burning period of 2 hours.

ANTI-SLIP COMPOUND

In order to meet the requirements for drivers of cars who have trouble with slipping clutches, or brakes that fail to hold, the Victor Clutch Compound Co., Nashua, N. H., has brought out a compound which has been in use for 3 years and which has claimed for it good results in the prevention of clutch-slipping and failure of brakes to hold. The compound is sold in cans fitted with oiler tops which facilitate its application.

BREAK CIRCUIT AUTO LOCK

The Safety Device Co., 431 East Tenth street, Indianapolis, Ind., manufactures locks which are to prevent the theft of motor cars, the lock being inserted in the electric circuit so that within the lock the circuit is broken and then locked, making it impossible to establish the circuit. The illustration, part A and part B, shows an end and side elevation of the lock. When used on electric cars, the lock is bolted into the side of the seat beneath the trimmings, the face only being visible. The lock is connected to the wiring originally attached to the cut-out, or plug, which is removed and replaced to the lock. By pulling the plug A forward the circuit is broken and locked in this position by the Yale lock B, which locks automatically. Before the connection can again be established and the motor started it is necessary to insert the Yale key and give one-half turn, when the lock releases and connection is automatically formed by the coil spring C forcing the plunger down to the position shown in part A of the illustration. In gasoline cars the lock works in the same way, but in these vehicles it is placed in the spark coil box where the ordinary switch is located. The lock is so arranged that the lever may be thrown



EBERMAN POWER TIRE PUMP

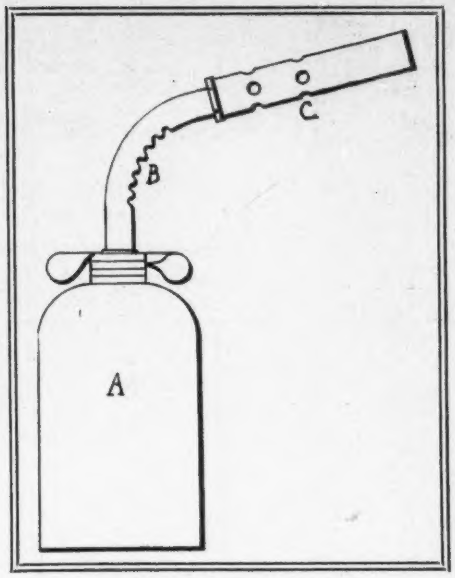
from one set of batteries to the other, or to neutral; and no matter what position it is in, pulling the switch bar outward breaks the circuit and automatically locks. There are but two keys which fit each lock, and these are not interchangeable, so that the owner of the car holding the keys has absolute control of the car.

MOTOR CAR WATCH DOG

A very simple and ingenious little instrument known as the motor car Watch Dog is manufactured for attachment to cars with the object of discovering if the car is being used by the chauffeur or others during the owner's absence. The instrument works on the vibration theory, so that with the car being used there is sufficient vibration, which is registered on a dial; this dial recording the length of time the car was in use. The instrument, made by the Automobile Protection Co., New York city, is small, encased in brass, and can be attached to any part of the car, it being sensitive enough for this work.

THE POINT SPARK PLUG

Fred W. Smith, Aberdeen, S. Dak., manufactures the Point spark plug, an illustration of which is given herewith. This plug combines in its make-up a threaded thimble part T made to enter the cylinder head. The top of this thimble portion is threaded internally to take the locking

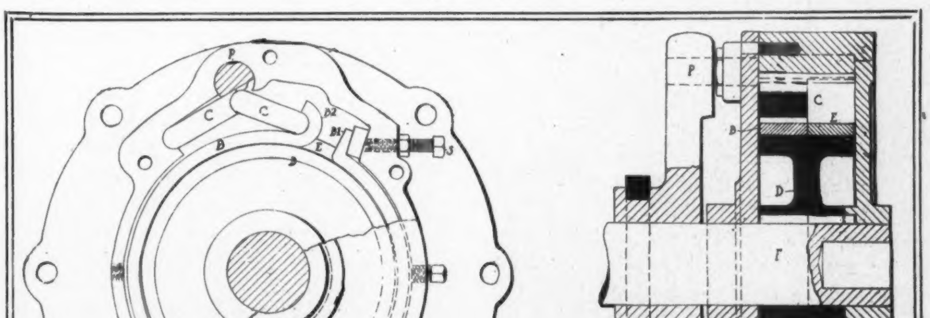


THE IMP GASOLINE TORCH

ring L which anchors the central electrode with its insulation B into the thimble part. The feature of the plug consists in nearly closing the lower end of the thimble and providing small openings A which allow the gasoline in the form of gas to enter, but prevent the heavier liquid parts of the mixture entering, the hope being to always secure in the plug a mixture easy to ignite. The plug has a large base and central electrode which are supposed to act as condensers to gain a stronger spark.

NEW MERCURY RECTIFIER

The Studebaker Automobile Co., South Bend, Ind., is offering in connection with its electric vehicles a mercury rectifier which allows of charging the batteries for these cars from an alternating current, such as commonly employed for lighting in houses and power purposes. Batteries for electric cars are charged always from an electric current. In towns and cities where direct currents are not produced the use of an electric car is impossible unless a rectifier is used, which, in short, transforms the current from an alternating to a direct.



WARNER DOUBLE-BAND CONTRACTING MOTOR CAR CLUTCH

Legal Lights and Side Lights

SPEED TRAPPERS TRIUMPH

An interesting case was decided by Judge Hutchinson in the Dedham, Mass., court the other day that grew out of the efforts of the Automobile Owners' Association of Boston to put an end to traps in Norwood and other places near Boston. Howard Hatch was stationed at Norwood and provided with a number of cards asking motorists to refrain from speeding and observe the laws. It also stated that there was a trap nearby. Chief Sackett of Norwood did not like the idea of nullifying the trap, so he arrested Mr. Hatch. In court Francis Hurtubis, Jr., defended the young man and told the judge that the association was trying to do away with the trap systems and have the laws upheld. Hatch was found guilty nevertheless of doing unnecessary work on Sunday. Judge Hutchinson said he thought the association could disseminate its knowledge on 6 days without doing much work on Sunday, and after finding Hatch guilty he placed the case on file. The association has not decided what action it will take in the matter. Mr. Hurtubis managed to get Chief Sackett on record as stating that he would not object to signs warning motorists being put up in the town, but he stated that he did not intend to have any one passing out cards revealing where the trap was located. During the day he had his trap shifted when the cards had been passed out. The case is interesting as there has been some doubt about it being a punishable offense to warn motorists of traps. The charge in this case, however, was doing unnecessary work on Sunday and it was brought out that Hatch was paid for his services.

HAD TO PAY DAMAGES

When a woman motorist gets real mad it pays mere man to hike for the redwoods. A case in point was that which happened on the Philadelphia-Atlantic City route last Sunday. While homeward-bound from the shore Colonel Benjamin Richards and his wife, the latter driving, were "sideswiped" by another car, the occupants of which never stopped to inquire as to what, if any, damage, had been done. Mrs. Richards, who possibly acquired her pugnacity from the doughty colonel, "beat it" after the dust cloud ahead until she reached Elwood, where, from Squire Elwood's office, the order was 'phoned ahead to stop every west-bound car at Hammonton until Mrs. Richards should reach there. When the pursueress burst upon the scene, some 20 minutes later, the street in front of the town hall was packed with cars, the occupants of which were wondering "what was up." Mrs. Richards, casting her indignant eye over the bunch, spotted Charles Le Boutelier, of Germantown, as the ungallant culprit. The town hall being closed on Sunday, a search was made for Squire Pfeil, who was found at his daily labor in the engine room of the glass works. Then and there the justice, after wiping the oil from his hands and adjusting his spectacles, heard the case. Mrs. Richards conducted the prosecution, and cross-questioned the defendant and his friends like a crack district attorney. After viewing Mrs. Richards' car the squire fined Le Boutelier in an amount sufficient to cover the damage and meet the costs and prosecutor and defendant continued their way Philadelphiaward, the squire returning to his engine. Mrs. Richards considered herself avenged.

NEW FRENCH LAW

To run away from the scene of an accident in France, or in any way to seek to evade the responsibility of an accident in which he may have been involved will in future render the offender liable to from 6 days to 2 months in prison and a fine of 16 to 500 francs. The new law applies not merely to drivers of motor cars, but to those in charge of any kind of vehicle whatever and is applicable to the whole of France. Its effect will be to make it impossible for any driver, whether he be in charge of a push cart or a racing motor car, to escape from an accident in which he has been involved and for which he may or may not be responsible. Rather than risk long and costly legal proceedings it has become too common for French motor drivers, as well as drivers who do not sit behind a wheel, to pass on their way without stopping to inquire what damage they have caused. The new law, in no way changing the original statute or civil and penal responsibility, will naturally have the effect of checking irresponsible driving on the continent.

DENOUNCE SPEEDING

At the meeting of the Automobile Club of Maryland a resolution was adopted denouncing the action of a Baltimore motorist in racing over the county roads and city streets against an airship on July 31. Such speed contests, the club declared, were in violation of the existing motor vehicle laws of Maryland, and it is the intention of the club to discourage such violations and co-operate with the authorities for its enforcement at all times. The race in question was between the airship in which Lincoln Beachey made a trip from Electric park to the city hall and return, a distance of 30 miles, and a 60-horsepower motor car belonging to Isidor Wolf. The airship beat the motor car by 3 minutes from the park to the city hall.

TAXES IN GERMANY

Motorphobes in Berlin, Germany, are again at work trying to induce the government to do something "against the modern nuisance: the motorwagen." Now that want the taxes on them raised. As a matter of fact in no other country of Europe and probably in the whole world are owners of motor cars subjected to such big taxes as in Germany. Taking as a comparison France, Italy and Switzerland the following table will give a fair idea of what the owner of a car has to pay in these countries, the tax being levied according to the horsepower:

Horsepower	Germany	France	Italy	Switzer-land
Up to 9 h. p....	$ 19.25	$27.00	$20.00	$ 8.00
From 9 to 14 h. p.	40.00	32.00	24.00	11.00
From 14 to 28 h. p.	107.50	40.40	30.00	24.00
From 28 upwards	137.50	58.00	40.00	36.00

Adding the various red-tape, so-called officials' bills for documents, stamps, city or village seals, etc., and the bill will still be increased at least $1 or $2. One of the interesting features about the tax situation in Germany is that the small car manufacturers, or at least the manufacturers of cars up to 14 horsepower, have been doing a better business, in proportion to their number, than those making more powerful cars. Prospective buyers, although wishing a bigger car or a more powerful machine, would rather purchase the little ones than to pay the enormous tax of either $107.50 or $137.50. It is likely that the anti-motoring element will not be able to have the taxes raised. On the contrary the influential members of the Kaiserlische Automobil Klub and the trade in general are clamoring to get the taxes reduced. It is pointed out that at present an enormous capital is invested in motor plants throughout Germany and that the business is not at all what it ought to be. The high taxes are directly responsible for this situation which tends to become more serious as the year's end approaches.

Recently there has been a change made in the government taxes on foreign motor cars touring in Germany. According to the new schedule a tourist visiting Germany only 1 day pays the government a tax of 75 cents. If he stays in the country from 2 to 5 days the tax is $2; for from 5 to 15 days, $3.75; from 15 to 30 days, $6.25; from 30 to 60 days, $10; from 60 to 90 days, $12.50. If the car remains longer than 90 days and unless it is laid up for repairs or some other cause which makes it impossible to move it, then the duty levied upon any ordinary imported car is also levied upon the tourist's car. The tourist must also take out a special number tag, which costs 50 cents, if he stays only 1 day and $1.25 if he stays from 2 to 90 days in the country. When leaving he must return the number tag.